

**AMERICAN SAMOA ENVIRONMENTAL PROTECTION AGENCY****Executive Office Building****Pago Pago, American Samoa 96799**TAUSEE F.F. SUNIA  
*Governor*TOGIOLA T.A. TULAFONO  
*Lt. Governor*TOGIPA TAUSAGA  
*Director*Phone: (684) 633-2304/2305  
Fax: (684) 633-5801

December 13, 2000

Steven L. Costa, Ph.D.  
Karen A. Glatzel, Ph.D.  
gdc  
216 Driftwood Lane  
PO Box 1238  
Trinidad, CA 95570-1238

Dear Drs. Costa and Glatzel:

My agency has received and reviewed the request for a water quality certification for the joint National Pollutant Discharge Elimination System (NPDES) permit for the discharge of effluent in Pago Pago Harbor, American Samoa, by Star-Kist Samoa and VCS Samoa Packing Co., Inc.

The discharge is found to be consistent with the protected uses for Pago Pago Harbor as stated in the American Samoa Water Quality Standards (ASWQS) and sections 301, 302, 303, 306, and 307 of the Clean Water Act. Certification is given for this discharge and the NPDES permit provided that all conditions of the NPDES permit and the ASWQS continue to be met.

If you have any questions on this certification, please feel free to contact me or Sheila Wiegman of my staff at (684) 633-2304.

Sincerely,

Togipa Tausaga, Executive Secretary  
Environmental Quality Commission

Cc: John Duffy, ASEPA

**AMERICAN SAMOA ENVIRONMENTAL PROTECTION AGENCY**

**December 19, 2000**

**To: Sara Roser, USEPA Region 9**

**From: Sheila Wiegman, ASEPA**

**Re: WQ Cert for the Canneries in AS**

**Please see the attached. Sorry for the delay.**

**EPA REGION IX STANDARD FEDERAL NPDES PERMIT CONDITIONS**

(Updated as of May 10, 1990)

1. Duty to Reapply [40 CFR 122.21(d)]

The Permittee shall submit a new application 180 days before the existing permit expires. 122.2(c)(2) POTW's with currently effective NPDES permits shall submit with the next application the sludge information listed at 40 CFR 501.15(a)(2).

2. Applications [40 CFR 122.22]

a. All applications shall be signed as follows:

- 1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
  - a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy- or decision-making functions for the corporation, or
  - b) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- 2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- 3) For a municipality, State, Federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (I) The chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

b. All reports required by permits and other information requested by the Director shall be signed by a person described in paragraph (a) of this Section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

- 1) The authorization is made in writing by a person described in paragraph (a) of this section;
- 2) The authorization specifies either an individual or a position having

responsibility for the overall operation of the regulated facility, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,

3) The written authorization is submitted to the Director.

- c. Changes to Authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
- d. Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

3. Duty to Comply [40 CFR 122.41(a)]

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

- a. The permittee shall comply with the effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulation that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- b. The Clean Water Act provides that:

- 1) Any person who causes a violation of any condition in this permit is subject to a civil penalty not to exceed \$25,000 per day of each violation. Any person who negligently causes a violation of any condition in this permit is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both for a first conviction. For a second conviction, such a person is subject to a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two years, or both. [Updated pursuant to the Water Quality Act of 1987]
- 2) Any person who knowingly causes a violation of any condition of this permit is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than three years, or both for a first conviction. For a second conviction, such a person is subject to a fine of not more than \$100,000 per day of violation, or by imprisonment for not more than six years, or both. [Updated pursuant to the Water Quality Act of 1987]
- 3) Any person who knowingly causes a violation of any condition of this permit and, by doing so, knows at that time that he thereby places another in imminent danger of death or serious bodily injury shall be subject to a fine of not less than \$250,000, or imprisonment for not more than 15 years, or both. A person who is an organization and violates this provision shall be subject to a fine of not more than \$1,000,000 for a first conviction. For a second conviction under this provision, the maximum fine and imprisonment shall be doubled. [Updated pursuant to the Water Quality Act of 1987]

4. Need to Halt or Reduce Activity Not a Defense [40 CFR 122.41(c)]

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate [40 CFR 122.41(d)]

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance [40 CFR 122.41(e)]

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or

similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

7. Permit Actions [40 CFR 122.41(f)]

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

8. Property Rights [40 CFR 122.41(g)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

9. Duty to Provide Information [40 CFR 122.41(h)]

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

10. Inspection and Entry [40 CFR 122.41(I)]

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and such other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the terms of the permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring equipment or control equipment), practices or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

11. Monitoring and Records [40 CFR 122.41(j)]

- a. Samples and measurements taken for the purpose of monitoring shall be

representative of the monitored activity.

- b. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application, except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503). This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
  - 1) The date, exact place and time of sampling or measurements;
  - 2) The individual(s) who performed the sampling or measurements;
  - 3) The date(s) the analyses were performed;
  - 4) The individual(s) who performed the analyses;
  - 5) The analytical techniques or methods used; and
  - 6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, or in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless test procedures have been specified in this permit.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both for first conviction. For a second conviction, such a person is subject to a fine of not more than \$20,000 per day of violation, or imprisonment for not more than four years, or both. [Updated pursuant to the Water Quality Act of 1987]

12. Signatory Requirement [40 CFR 122.41(k)]

- a. All applications, reports, or information submitted to the Director shall be signed and certified. (See 40 CFR 122.22)

- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both for a first conviction. For a second conviction, such a person is subject to a fine of not more than \$20,000 per day of violation, or imprisonment of not more than four years, or both. [Updated pursuant to the Water Quality Act of 1987]

13. Reporting Requirements [40 CFR 122.41(l)]

- a. Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - 1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
  - 2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).
  - 3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Transfers. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR 122.61; in some cases, modification or revocation and reissuance is mandatory).
- d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.



- 1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
  - 2) If the Permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 or in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, as specified in the permit, then the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR, or sludge reporting form specified by the Director.
  - 3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- f. Twenty-four hour reporting.
- 1) The permittee shall report any noncompliance which may endanger human health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
  - 2) The following shall be included as information which must be reported within 24 hours under this paragraph.
    - a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(g))
    - b) Any upset which exceeds any effluent limitation in the permit.
    - c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (See 40 CFR 122.44(g))

- g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (6) of this section.
- h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

14. Bypass [40 CFR 122.41(m)]

a. Definitions

- 1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- 2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

- b. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of paragraphs (3) and (4) of this section.

c. Notice.

- 1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
- 2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph (a)(6) of section 13 (24-hour notice).

d. Prohibition of bypass.

- 1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
  - a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

- b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
  - c) The permittee submitted notices as required under paragraph (3) of this section.
- 2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (4)(I) of this section.

15. Upset [40 CFR 122.41(n)]

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (3) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defenses of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - 1) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - 2) The permitted facility was at the time being properly operated; and
  - 3) The permittee submitted notice of the upset as required in paragraph 13)(6)(ii)(B) (24-hour notice).
  - 4) The permittee complied with any remedial measures required under 40 CFR 122.41(d).

- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

16. Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers [40 CFR 122.42(a)]

In addition to the reporting requirements under 40 CFR 122.41(l), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - 1) One hundred micrograms per liter (100 µg/l);
  - 2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
  - 3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - 4) The level established by the Director in accordance with 40 CFR 122.44(f).
- b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - 1) Five hundred micrograms per liter (500 µg/l);
  - 2) One milligram per liter (1 mg/l) for antimony;
  - 3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7);
  - 4) The level established by the Director in accordance with 40 CFR 122.44(f).

17. Publicly Owned Treatment Works [40 CFR 122.42(b)]

This section applies only to publicly owned treatment works as defined at 40 CFR 122.2.

- a. All POTW's must provide adequate notice to the Director of the following:

- 1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CWA if it were directly discharging those pollutants; and
  - 2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - 3) For the purposes of this paragraph, adequate notice shall include information on (I) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.
- b. [The following condition has been established by Region 9 to enforce applicable requirements of the Resource Conservation and Recovery Act] Publicly owned treatment works may not receive hazardous waste by truck, rail, or dedicated pipe except as provided under 40 CFR 270. Hazardous wastes are defined at 40 CFR 261 and include any mixture containing any waste listed under 40 CFR 261.31 - 261.33. The Domestic Sewage Exclusion (40 CFR 261.4) applies only to wastes mixed with domestic sewage in a sewer leading to a publicly owned treatment works and not to mixtures of hazardous wastes and sewage or septage delivered to the treatment plant by truck.

18. Reopener Clause [40 CFR 122.44(c)]

This permit shall be modified or revoked and reissued to incorporate any applicable effluent standard or limitation or standard for sewage sludge use or disposal under sections 301(b)(2)(C), and (D), 304(b)(2), 307(a)(2) and 405(d) which is promulgated or approved after the permit is issued if that effluent or sludge standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant or sludge use or disposal practice not limited in the permit.

19. Privately Owned Treatment Works

[The following conditions were established by Region 9 to enforce applicable requirements of the Resource Conservation and Recovery Act and 40 CFR 122.44(m)]

This section applies only to privately owned treatment works as defined at 40 CFR 122.2.

- a. Materials authorized to be disposed of into the privately owned treatment works and collection system are typical domestic sewage. Unauthorized material are hazardous waste (as defined at 40 CFR Part 261), motor oil, gasoline, paints, varnishes, solvents, pesticides, fertilizers, industrial wastes, or other materials not generally associated with toilet flushing or personal hygiene, laundry, or food preparation, unless

specifically listed under "Authorized Non-domestic Sewer Dischargers" elsewhere in this permit.

- b. It is the permittee's responsibility to inform users of the privately owned treatment works and collection system of the prohibition against unauthorized materials and to ensure compliance with the prohibition. The permittee must have the authority and capability to sample all discharges to the collection system, including any from septic haulers or other unsewered dischargers, and shall take and analyze such samples for conventional, toxic, or hazardous pollutants when instructed by the permitting authority or by an EPA, State, or Tribal inspector. The permittee must provide adequate security to prevent unauthorized discharges to the collection system.
- c. Should a user of the privately owned treatment works desire authorization to discharge non-domestic wastes, the permittee shall submit a request for permit modification and an application, pursuant to 40 CFR 122.44(m), describing the proposed discharge. The application shall, to the extent possible, be submitted using EPA Forms 1 and 2C, unless another format is requested by the permitting authority. If the privately owned treatment works or collection system user is different from the permittee, and the permittee agrees to allow the non-domestic discharge, the user shall submit the application and the permittee shall submit the permit modification request. The application and request for modification shall be submitted at least 6 months before authorization to discharge non-domestic wastes to the privately owned treatment works or collection system is desired.

20. Transfers by Modification [40 CFR 122.61(a)]

Except as provided in section 21, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under 40 CFR 122.62(b)(2)), or a minor modification made (under 40 CFR 122.63(d)), to identify the new permittee and incorporate such other requirements as may be necessary under the CWA.

21. Automatic Transfers [40 CFR 122.61(b)]

An alternative to transfers under section 20, any NPDES permit may be automatically transferred to a new permittee if:

- a. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date in paragraph (2) of this section;
- b. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

- c. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (2) of this section.

22. Minor Modification of Permits [40 CFR 122.63]

Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of 40 CFR Part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with 40 CFR Part 124 draft permit and public notice as required in 40 CFR 122.62. Minor modifications may only:

- a. Correct typographical errors;
- b. Require more frequent monitoring or reporting by the permittee;
- c. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;
- d. Allow for a change in ownership or operational control of a facility where the Director determines that no other change in their permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Director.
- e. Change the construction schedule for a discharger which is a new source. No such change shall affect a discharger's obligation prior to discharge under 40 CFR 122.29.
- f. Delete a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with the permit limits.
- g. When the permit becomes final and effective on or after March 9, 1982, conform to changes respecting 40 CFR 122.41(e), (l), (m)(4)(I)(B), (n)(3)(I), and 122.42(a) issued September 26, 1984.
- h. Incorporate conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 as enforceable conditions of the POTW's permit.

23. Termination of Permits [40 CFR 122.64]

The following are causes for terminating a permit during its term, or for denying a permit renewal application:

- a. Noncompliance by the permittee with any condition of the permit;
- b. The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;
- c. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or
- d. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit (for example, a plant closure or termination of discharge by connection to a POTW).

24. Availability of Reports [Pursuant to Clean Water Act Section 308]

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Regional Administrator. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

25. Removed Substances [Pursuant to Clean Water Act Section 301]

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

26. Severability [Pursuant to Clean Water Act Section 512]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and remainder of this permit, shall not be affected thereby.

27. Civil and Criminal Liability [Pursuant to Clean Water Act Section 309]

Except as provided in permit conditions on "Bypass" (Section 14) and "Upset" (Section 15), nothing in this permit shall be construed to relieve the permittee from civil or criminal



penalties for noncompliance.

28. Oil and Hazardous Substance Liability [Pursuant to Clean Water Act Section 311]

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act.

29. State or Tribal Law [Pursuant to Clean Water Act Section 510]

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State or Tribal law or regulation under authority preserved by Section 510 of the Clean Water Act.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION IX**

**75 Hawthorne Street  
San Francisco, CA 94105-3901**

**OFFICE OF THE  
REGIONAL ADMINISTRATOR**

In reply, please refer to: WTR-5

Herman Gebauer, General Manager  
COS Samoa Packing Company, Inc.  
P.O. Box 957  
Pago Pago, Tutuila  
American Samoa 96799

**Re: COS Samoa Packing Company, Inc.  
NPDES Permit No. AS0000027**

Dear Mr. Gebauer:

Enclosed is a copy of the above captioned National Pollution Discharge Elimination System (NPDES) permit. The NPDES permit is hereby issued upon the date of signature and shall become effective thirty-three (33) days from the date of this cover letter, unless a petition is filed with the Environmental Appeals Board (EAB) to review any conditions of the final permit under 40 CFR 124.19(a), as revised at 65 Fed. Reg. 30886, 30911 (May 15, 2000). A copy of such petition should be sent to the EPA address listed above.

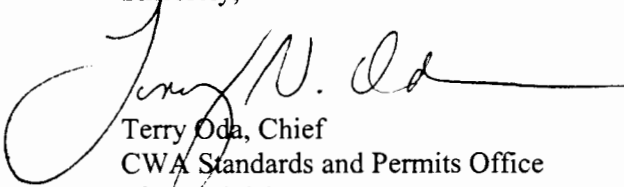
The staff at the U.S. Environmental Protection Agency (EPA) has reviewed the NPDES permit application for the above captioned facility and have prepared a draft permit in accordance with the Clean Water Act (CWA). The EPA has also published a public notice of its tentative decision to issue this permit. After considering the expressed views of all interested persons and agencies, and pertinent Federal statutes and regulations, the EPA, pursuant to 40 CFR Part 124, prepared the above captioned final permit. The final permit conforms to the certification issued by the American Samoa EPA pursuant to 401(a) of the CWA.

As stated in newly-revised 40 CFR 124.19(a), within 33 days after EPA issues the final permit, any person who filed comments on the draft permit or participated in the public hearing may petition the EAB to review any condition of the permit decision. Any person who failed to file comments or failed to participate in a public hearing on the draft permit may petition for administrative review only with regard to changes made from the draft permit to the final permit. The petition shall include a statement of the reasons supporting the review, including a demonstration that any issue being raised was raised during the public comment period (including any public hearing) to the extent required by these regulations and, when appropriate, a showing that the condition in question is based on: (1) a finding of fact or conclusion of law which is clearly erroneous; or (2) an exercise of discretion or an important policy consideration which the EAB should, in its discretion, review. Under 40 CFR 124.16 and 124.60, a petition for review under 40 CFR 124.19 stays the force and effect of the contested conditions of the final permit until final

agency action under 40 CFR 124.19(f).

The EPA will routinely deny any request for an evidentiary hearing which is postmarked later than the 33<sup>rd</sup> day from the date of this cover letter. If you have any questions regarding the procedures outlined above, please call Sara Roser at (415) 744-1914.

Sincerely,

A handwritten signature in dark ink, appearing to read "Terry Oda", is written over the typed name and title.

Terry Oda, Chief  
CWA Standards and Permits Office  
Water Division

Enclosures

cc: Togipa Tausaga, Director  
American Samoa Environmental Protection Agency  
Office of the Governor  
Pago Pago, AS 96799

Jim Cox  
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4510 Executive Drive  
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Steve Costa  
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Department of Marine and Wildlife Resources  
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P.O. Box 4318  
American Samoa Government  
Pago Pago, AS 96799

Mike Dworsky  
American Samoa Power Authority  
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Pago Pago, AS 96799

Permit No. AS0000027

AUTHORIZATION TO DISCHARGE UNDER THE  
POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"),

COS Samoa Packing Company, Inc.  
P.O. Box 957  
Pago Pago, Tutuila  
American Samoa 96799

is authorized to discharge tuna processing wastewater from the cannery located at Pago Pago, American Samoa from outfall Discharge Serial No. 001:

|            |          |         |         |   |
|------------|----------|---------|---------|---|
| Latitude:  | 14 deg.  | 17 min. | 01 sec. | S |
| Longitude: | 170 deg. | 40 min. | 02 sec. | W |

to receiving waters named: Pago Pago Harbor in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in Sections A through G hereof.

This permit shall become effective on January 23, 2001.

This permit and the authorization to discharge shall expire at midnight, January 23, 2006.

Signed this 26<sup>th</sup> day of December, 2000.

For the Regional Administrator



Alexis Strauss, Director  
Water Division

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from Outfall 001.

The effluent shall be sampled prior to its commingling with the effluent from the other cannery.

Such discharge shall be limited and monitored by the permittee as specified below:<sup>(1)</sup>

| Effluent Characteristics          | Discharge Limitations |                | Monitoring Requirements      |                     |
|-----------------------------------|-----------------------|----------------|------------------------------|---------------------|
|                                   | 30-Day Average        | Daily Maximum  | Measurement Frequency        | Sample Type         |
| Flow (MGD)                        | --                    | 1.40           | Continuous                   | Recorder            |
| Biochemical Oxygen Demand (5-day) | <sup>(5)</sup>        | <sup>(5)</sup> | Once/Month                   | Composite           |
| Suspended Solids (lbs/day)        | 2376                  | 5976           | Once/Week                    | Composite           |
| Oil and Grease (lbs/day)          | 605                   | 1512           | Once/Week                    | Grab <sup>(2)</sup> |
| Total Phosphorus (lbs/day)        | 208                   | 271            | One Set/Month <sup>(3)</sup> | Composite           |
| Total Nitrogen (lbs/day)          | 800                   | 1935           | One Set/Month <sup>(3)</sup> | Composite           |
| Acute Toxicity                    | --                    | <sup>(4)</sup> | Once/6 Months                | Composite           |
| Total Ammonia (mg/l)              | --                    | 133            | Once/Week                    | Composite           |
| Temperature (°F)                  | 90                    | 95             | Continuous                   | Continuous          |
| Total Copper (ug/l)               | 66                    | 108            | Once/Month                   | Composite           |
| Total Zinc (ug/l)                 | 1545                  | 1770           | Once/Month                   | Composite           |
| pH                                | --                    | <sup>(6)</sup> | Continuous                   | Continuous          |

Notes:

- (1) Where discharge monitoring data is reported as “below detection limit,” both the detection limit obtained and the analytical method used shall be included on the monthly discharge monitoring report (DMR).
- (2) Each oil and grease sample shall consist of four individual grab samples (“sub-samples”) which shall be taken at even intervals during each production period in which samples are taken. Each sub-sample shall be separately analyzed and the mean value of the four sub-samples shall be reported for daily maximum and monthly average.
- (3) Permittee is required to monitor monthly. Each month permittee shall sample twice in a single week on production days. Should the permittee wish to monitor the effluent on a non-production day(s), the permittee must monitor for the six consecutive days following the non-production day on which the first sample was taken. The average of all samples taken during that month will determine compliance with the “monthly average.”

Should the canneries consistently comply with their TN and TP limitations and should the monitoring data show that the discharge is not impacting the water quality in the harbor or causing water quality violations for one year, the permit may be modified to incorporate a “weighted average” method of measuring compliance with the limitations. The numerical limitations themselves shall not be made any less stringent.

- (4) See Section D “Toxicity” for monitoring requirements.
- (5) No limit set at this time. Monitoring and reporting only.
- (6) The pH is limited between 6.5 and 8.6 standard units. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and no individual excursions from the range of pH values shall exceed 60 minutes.

## B. DISCHARGE SPECIFICATIONS

Samples taken at monitoring stations 8, 8A, 14, 15, 16, and 18 in the receiving water shall not reveal\* any of the following in accordance with American Samoa Water Quality Standards:

1. Chlorophyll a levels in excess of 1.0 ug/l;
2. Light penetration depth less than 65 feet;
3. Objectionable color, odor, or taste, either alone or in combinations, or in the biota;
4. Visible floating materials, grease, oil, scum, foam, and other floating material; and,
5. Materials that will produce visible turbidity or settle to form objectionable deposits.

Samples taken at monitoring stations 8, 8A, 15, 16, and 18 in the receiving water (those stations outside the zone of initial dilution [ZID]) shall not reveal\* any of the following in accordance with American Samoa Water Quality Standards:

1. Dissolved oxygen (DO) concentration less than 5.0 mg/l or 70% saturation;
2. Turbidity in excess of 0.75 nephelometric turbidity units; and
3. Toxicity to aquatic life.

Samples taken at monitoring stations 15, 16, and 18 in the receiving water (those stations outside the zone of mixing [ZOM]) shall not reveal\* any of the following in accordance with the American Samoa Water Quality Standards:

1. A temperature more than 1.5 degrees Fahrenheit from conditions that would occur naturally;
2. A level of total nitrogen in excess of 200 ug/l; and
3. A level of total phosphorous in excess of 30 ug/l.

\*Should any samples of ambient water reveal exceedances of the standards specified above and should ASEPA and/or USEPA determine that the canneries' discharge is the cause of the exceedance, the canneries may be required to undertake various actions including ceasing discharge and/or additional studies or monitoring to determine the cause of the exceedance. Violations of water quality standards shall be determined in accordance with American Samoa Water Quality Standards.

## C. PROTECTED AND PROHIBITED USES

### 1. The protected uses of Pago Pago Harbor are as follows:

- a. Recreational and subsistence fishing;
- b. Boat-launching ramps and designated mooring areas;
- c. Subsistence food gathering, e.g. shellfish harvesting;
- d. Aesthetic enjoyment;
- e. Whole and limited body-contact recreation, e.g. swimming, snorkeling, surfing, and scuba diving;
- f. Support and propagation of marine life;
- g. Industrial water supply;
- h. Mari-culture development;
- i. Normal harbor activities; e.g. ship movements, docking, loading and unloading, marine railways and floating drydocks; and
- j. Scientific investigation.

### 2. Prohibited uses include but are not limited to:

- a. Dumping or discharge of solid waste;
- b. Animal pens over or adjacent to any shoreline;
- c. Dredging and filling activities, except when permitted by the American Samoa Environmental Quality Commission (ASEQC) in accordance with the Environmental Quality Act (Title 24, American Samoa Code);
- d. Hazardous and radioactive waste discharges;
- e. Discharge of oil sludge, oil refuse, fuel oil, or bilge water, or any other wastewater from any vessel or unpermitted shoreside facility.

The permittee shall not engage in any of the above prohibited uses nor in any uses that would conflict with the protected uses of the harbor.

## D. TOXICITY

### 1. Proposed Effluent Biomonitoring

Beginning within 180 days after the effective date of this permit, the permittee shall conduct, or have a contract laboratory conduct, semi-annual 96-hour static renewal acute bioassays on composite effluent samples according to the methods described in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/600/4-90/027F), August 1993 using the white shrimp, *Penaeus vannamei* postlarvae. In the event that *Penaeus vannamei* are



not available for testing, *Mysidopsis bahia* may be used. Every reasonable effort shall be made to ship the samples to the testing laboratory in a manner to meet holding times and maintain sample temperature at 4C. Tests shall be conducted using a  $\leq 0.5$  dilution series (i.e., 100%, 25%, 12.5%, 6.25%, 3.13%, 1.56%).

Use probit analysis to calculate the LC50 and 95% confidence intervals. Use Analysis of Variance and Dunnett's multiple comparison test to calculate the No Observed Effect Concentrations (NOEC). These results will be reported on the permittee's Discharge Monitoring Report (DMRs).

Each cannery may conduct the tests individually or may conduct a test using a single combined flow weighted composite effluent. However, ASEPA or USEPA may require additional individual bioassay tests for each cannery after review of combined composite effluent tests.

## 2. Priority Pollutant Scan

The permittee shall conduct at least one priority pollutant scan of the effluent. This test shall be conducted prior to the application for renewal of the permit. The results shall be submitted to the USEPA and ASEPA prior to application for renewal of the permit. If the toxicity tests indicate that the discharge causes, has a reasonable potential to cause, or contributes to non-compliance with American Samoa Water Quality Standards, then ASEPA and/or USEPA may require full or partial priority pollutant scans be conducted concurrent with the required semi-annual bioassay tests.

## 3. Toxicity Reopener

Should any of the monitoring indicate that the discharge causes, has reasonable potential to cause, or contributes to an excursion above a water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. Also, this permit may be modified, in accordance with the requirements set forth at 40 CFR 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity, or to implement any EPA-approved new state water quality standards or testing methods applicable to effluent toxicity.

## E. RECEIVING WATER QUALITY MONITORING PROGRAM

To determine compliance with water quality standards, the receiving water quality monitoring program must document water quality at the outfall, at areas near the zone of initial dilution (ZID) and zone of mixing (ZOM) boundaries, at areas beyond these zones where discharge impacts might reasonably be expected, and at reference control areas. The canneries (StarKist Samoa and COS Samoa Packing) shall cooperatively perform, or cause to be performed, water quality monitoring at the specified stations at regular frequencies as detailed below.

Should any monitoring or studies reveal, in the judgement of either ASEPA or USEPA, that the water quality, coral reef, or overall biological health of the harbor is being impaired as a result of the joint cannery outfall discharge, either agency may at any time prohibit further discharge and/or require additional monitoring.

All water quality samples should be collected and processed according to the protocols found in the most recent edition of USEPA's guidance document entitled, Quality Assurance and Quality Control (QA/QC) for 301(h) Monitoring Programs: Guidance on Field and Laboratory Methods (EPA, 1987a, or the most recent edition). Monitoring reports shall be submitted to ASEPA and USEPA on a semi-annual basis.

Monitoring stations shall be designated and located as shown below (also see Figure 1):

| Station | Vicinity        | Location     | Latitude     | Longitude     |
|---------|-----------------|--------------|--------------|---------------|
| 5       | Transition Zone | Harbor Mouth | 14 17.713' S | 170 39.733' W |
| 8       | Middle Harbor   | Inside ZOM   | 14 16.843' S | 170 40.098' W |
| 8A      | Middle Harbor   | Inside ZOM   | 14 16.826' S | 170 40.150' W |
| 11      | Inner Harbor    | East End     | 14 16.480' S | 170 40.947' W |
| 13      | Inner Harbor    | West End     | 14 16.304' S | 170 41.841' W |
| 14      | Middle Harbor   | Diffuser     | 14 16.911' S | 170 40.065' W |
| 15      | Middle Harbor   | ZOM Edge     | 14 16.584' S | 170 40.116' W |
| 16      | Middle Harbor   | ZOM Edge     | 14 16.891' S | 170 40.354' W |
| 18      | Outer Harbor    | ZOM Edge     | 14 16.092' S | 170 40.041' W |

Note: Latitude and longitude and based on recorded GPS using the WGS coordinate system as employed in previous Receiving Water Quality Monitoring Reports, Pago Pago Harbor, American Samoa, 1995-1997.

It is recommended that the stations be located using the sextant angle resection positioning method or a positioning system that affords an equivalent degree of accuracy and precision. Other means may be used if, in the judgement of ASEPA and EPA Region

9, they are of sufficient accuracy and precision to allow reoccupation of the stations within plus or minus six (6) meters.

Monitoring shall be done semi-annually during the two predominant oceanographic season described as the tradewind and non-tradewind season. One sampling event should be done in the months of February through April and the other sampling event should be done in the months of August through October. Reports will be submitted to ASEPA and USEPA within 60 days of receipt of laboratory results.

Temperature, dissolved oxygen (DO), pH, conductivity, and turbidity shall be measured as continuous vertical profiles at each station. Salinity shall be calculated from temperature and conductivity. In the event of malfunctions of the sensors used to measure the continuous vertical profile parameters, direct measurement of grab samples, in the field, will be acceptable. Light penetration shall be measured at all stations by measurement of sechi depth. All other required parameters shall be measured in grab samples taken at one (1) meter below the surface, mid-depth, and one meter above the bottom. In locations where the depth is greater than 40 meters, samples shall be taken at one meter below the surface, 20 meters, and 40 meters.

The following parameters shall constitute the Water Quality Monitoring Program:

| Parameter         | Units         | Stations                 | Sample Type      |
|-------------------|---------------|--------------------------|------------------|
| Temperature       | F             | 5,8,18,14,15,16,8A,11,13 | Vertical Profile |
| Salinity          | PSU           | 5,8,18,14,15,16,8A,11,13 | Vertical Profile |
| pH                | SU            | 5,8,18,14,15,16,8A,11,13 | Vertical Profile |
| Dissolved Oxygen  | mg/l and %Sat | 5,8,18,14,15,16,8A,11,13 | Vertical Profile |
| Turbidity         | NTU           | 5,8,18,14,15,16,8A,11,13 | Vertical Profile |
| Turbidity         | NTU           | 18, 14, 15, 16           | Grab             |
| Light Penetration | feet          | 5,8,18,14,15,16,8A,11,13 | Direct Reading   |
| Suspended Solids  | mg/l          | 5,8,18,14,15,16,8A,11,13 | Grab             |
| Chlorophyll-a     | mg/l          | 5,8,18,14,15,16,8A,11,13 | Grab             |
| Total Ammonia     | mg/l          | 5,8,18,14,15,16,8A,11,13 | Grab             |
| Total Nitrogen    | mg/l          | 5,8,18,14,15,16,8A,11,13 | Grab             |
| Total Phosphorous | mg/l          | 5,8,18,14,15,16,8A,11,13 | Grab             |
| Copper            | mg/l          | 5, 8, 8A,11,13,14,15     | Grab             |
| Zinc              | mg/l          | 5, 8, 8A,11,13,14,15     | Grab             |
| Lead              | mg/l          | 5,11,13,14               | Grab             |
| Mercury           | mg/l          | 5,11,13,14               | Grab             |
| Arsenic           | mg/l          | 5,11,13,14               | Grab             |

The water quality analyses shall be expanded for one of the water quality monitoring events during the first year of the permit as described in Section H below.

## F. SEDIMENT MONITORING

Sediment monitoring is conducted to determine the character of the sediments in relation to long-term high nutrient discharge by the permittee in the harbor and to determine if the harbor recovery will be affected by resuspension of the nutrients.

The canneries (StarKist Samoa and COS Samoa Packing) shall cooperatively perform a sediment monitoring program in Pago Pago Harbor in order to assess the concentration of nutrient and organic components, the distribution of stored nutrients, the size of the nutrient reservoir, and the rate of accumulation of nutrients. Seven sites shall be located within Pago Pago Harbor and analyzed for total nitrogen, total phosphorous, percent organics, percent solids, volatile solids, grain size distribution, oxidation-reduction potential, sulfides, copper, zinc, lead, mercury, and arsenic. Three sites shall be located in inner Pago Pago Harbor and four sites shall be located in the middle and outer portion of the harbor.

Monitoring stations shall be designated and located as shown below (see Figures 2):

| Station | Vicinity     | Location                 | Latitude     | Longitude     |
|---------|--------------|--------------------------|--------------|---------------|
| IH1     | Inner Harbor | Between old outfalls     | 14 16.626' S | 170 41.146' W |
| IH2     | Inner Harbor | Offshore of old outfalls | 14 16.708' S | 170 41.146' W |
| IH3     | Inner Harbor | Off Pago Pago stream     | 14 16.655' S | 170 41.854' W |
| OH1     | Outer Harbor | 400' NNW of outfall      | 14 17.076' S | 170 40.100' W |
| OH2     | Outer Harbor | 400' SSE of outfall      | 14 17.186' S | 170 40.025' W |
| OH3     | Outer Harbor | Utulei outfall           | 14 17.243' S | 140 40.425' W |
| OH4     | Outer Harbor | Reference                | 14 17.537' S | 170 40.067' W |

Note: Latitude and longitude based on recorded GPS using the WGS coordinate system as employed in previous Sediment Monitoring Reports, Pago Pago American Samoa, 1993-1997.

The sites and study methods shall be the same as described in the previously approved study plan for the sediment monitoring conducted during 1993-1997. The sampling shall be conducted twice: once during the first year of the permit and once during the fourth year of the permit. A report of the sediment monitoring program shall be submitted to ASEPA and USEPA within 90 days after completion of the sampling.

The following parameters shall constitute the Sediment Monitoring Program:

| Parameter             | Units             | Stations | Sample Type       |
|-----------------------|-------------------|----------|-------------------|
| Total Nitrogen (TKN)  | mg/kg (dry)       | All      | Grab              |
| Total Phosphorous     | mg/kg (dry)       | All      | Grab              |
| Total Sulfides        | mg/kg (dry)       | All      | Grab              |
| Redox Potential       | mV                | All      | Grab <sup>1</sup> |
| Total Organic Carbon  | %                 | All      | Grab              |
| Percent Solids        | %                 | All      | Grab              |
| Total Volatile Solids | %                 | All      | Grab              |
| Grain Size            | mm (distribution) | All      | Grab              |
| Copper                | mg/kg             | All      | Grab              |
| Zinc                  | mg/kg             | All      | Grab              |
| Lead                  | mg/kg             | All      | Grab              |
| Mercury               | mg/kg             | All      | Grab              |
| Arsenic               | mg/kg             | All      | Grab              |

<sup>1</sup> Measured in the field when sample is acquired

The first sediment monitoring event shall be expanded during the first year of the permit as described in Section H below. If possible, the sediment sampling event conducted in conjunction with the fish tissue study will include core samples at the inner harbor stations. The canneries shall make a reasonable attempt to collect core samples and, if successful, analysis shall be done using material from two levels in the cores (or at the lower level from the core and a surficial grab sample).

#### G. CORAL REEF SURVEY

The canneries (StarKist Samoa and COS Samoa Packing) shall cooperatively continue the coral reef survey based on the previously approved study plan for the monitoring conducted during 1993-1997 with the modifications described below. The purpose of the study is to assess the potential impacts of the discharge on the nearby coral reef. The intent of the survey is to detect significant differences, if any, from the previous surveys. VCR formatted video copies and a report of results shall be submitted to the ASEPA and USEPA with reports within 120 days of the survey.

The survey will be done twice during the permit period, once in year two of the permit and once in year 5 of the permit. These surveys will include a subset of the previous

transect locations. Transect locations to be surveyed are MH-1, MH-4, OH-5, and OH-1 (see Figure 3). After reviewing the results of the first survey, ASEPA and USEPA may require different or additional transects during the second survey and/or additional surveys.

## H. FISH TISSUE STUDY

The canneries (COS Samoa Packing and StarKist Samoa) shall cooperatively perform a study during the first year of the permit that addresses the levels of selected parameters in the tissues of resident organisms in the Harbor. The study will be done concurrently with receiving water quality monitoring (Section E) and sediment monitoring (Section F) sampling. The water quality and sediment monitoring studies shall be expanded, for the sampling done in conjunction with the fish study, to include selected additional stations and parameters. The intent of the study is to assess the potential sources and levels of these substances and is a follow-up study to previous monitoring performed by ASEPA.

Within 120 days of the effective date of the permit, the canneries shall submit a study plan to ASEPA and USEPA-Region 9 for comment and approval. The study shall include the following elements:

1. Whole fish tissue analysis of mullet, mackerel, and crab (or acceptable substitute organisms) for lead, arsenic, mercury, PCBs (Aroclor 1260), selected pesticides (DDT, DDE, DDD), and dioxin. Analysis of dioxin will be required in only one composite sample of species collected from the inner harbor.
2. The study shall primarily address organisms captured in the harbor. Detailed station locations and parameters to be analyzed shall be described in the study plan. The following stations (See Figure 4) and parameters should be included in the study:

| Parameter         | Inner Harbor     |                    |                | Reference        |                    |                |
|-------------------|------------------|--------------------|----------------|------------------|--------------------|----------------|
|                   | Mullet Composite | Mackerel Composite | Crab Composite | Mullet Composite | Mackerel Composite | Crab Composite |
| <b>Lead</b>       | X                | X                  | X              | X                | X                  | X              |
| <b>Arsenic</b>    | X                | X                  | X              | X                | X                  | X              |
| <b>Mercury</b>    | X                | X                  | X              | X                | X                  | X              |
| <b>PCBs</b>       | X                | X                  | X              | X                | X                  | X              |
| <b>Pesticides</b> | X                | X                  | X              | X                | X                  | X              |
| <b>Dioxin</b>     |                  | X                  |                |                  |                    |                |

Notes: The inner harbor is that area described as shoreward of a line extending from Goat Island Point to the northern shoreline. The reference location shall be described in the study plan submitted within 120 days of the effective date of the permit.

- The study shall include water quality samples for the same set of parameters (excluding dioxin, which will be considered for only one sample) at a minimum of six stations in the inner and middle harbor and a reference station. Detailed station locations and parameters to be analyzed will be described in the study plan. The following stations and parameters should be included in the study:

| Parameter         | Inner Harbor Stations |     |    |    | Middle Harbor Stations |    |    | Reference Station |
|-------------------|-----------------------|-----|----|----|------------------------|----|----|-------------------|
|                   | 11                    | 11A | 12 | 13 | 8A                     | 15 | 14 |                   |
| <b>Lead</b>       | X                     | X   | X  | X  | X                      | X  | X  | X                 |
| <b>Arsenic</b>    | X                     | X   | X  | X  | X                      | X  | X  | X                 |
| <b>Mercury</b>    | X                     | X   | X  | X  | X                      | X  | X  | X                 |
| <b>PCBs</b>       | X                     |     |    | X  |                        |    |    | X                 |
| <b>Pesticides</b> | X                     |     |    | X  |                        |    |    | X                 |
| <b>Dioxin</b>     |                       |     |    | X  |                        |    |    |                   |

Note: All stations are previously occupied harbor water quality stations.

4. The study shall include sediment samples for the same set of parameters (excluding dioxin, except at one station) at a minimum of six stations in the inner harbor and a reference station. If possible, the sediment sampling will include core samples at the inner harbor stations. The canneries shall make a reasonable attempt to collect core samples and, if successful, analysis shall be done using material from two levels in the cores (or at the lower level from the core and a surficial grab sample). Detailed station locations and parameters to be analyzed shall be described in the study plan. The following stations (See Figure 4) and parameters should be included in the study:

| Parameter         | Inner Harbor Stations  |             |             |          |           |            | Reference Station |
|-------------------|--|-------------|-------------|----------|-----------|------------|-------------------|
|                   | Total organic carbon, total solids, total volatile solids, and grain size distribution will be analyzed for all samples. |             |             |          |           |            |                   |
|                   | <b>IH-1</b>  | <b>IH-2</b> | <b>IH-3</b> | <b>4</b> | <b>FD</b> | <b>SWM</b> | <b>OH-4</b>       |
| <b>Lead</b>       | X  | X           | X           | X        | X         | X          | X                 |
| <b>Arsenic</b>    | X  | X           | X           | X        | X         | X          | X                 |
| <b>Mercury</b>    | X  | X           | X           | X        | X         | X          | X                 |
| <b>PCBs</b>       |  |             | X           |          |           |            | X                 |
| <b>Pesticides</b> |  |             | X           |          |           |            | X                 |
| <b>Dioxin</b>     |  |             | X           |          |           |            |                   |

Notes: IH-1, IH-2, IH-3, and OH-4 are the previously occupied sediment quality stations.

Station 4 is the previously occupied station for the CH2M HILL water quality field measurements (1/1/91). Stations FD and SWM will be adjacent to the fuel dock and the boat repair facility, respectively.

5. The study plan shall include descriptions of sampling locations, sampling methods, analytical laboratories to be used, laboratory methods, detection levels, and A/QC procedures.
6. A report shall be prepared and submitted to ASEPA and USEPA within 90 days of receipt of laboratory results.



#### I. SEA TURTLE REVIEW

In conjunction with the fish tissue study, the canneries will retain a recognized expert to review the effluent chemistry and bioassay data to determine if there is any anticipated impact on sea turtles in Pago Pago Harbor. The canneries will provide a report of the findings to EPA and ASEPA concurrent with the fish tissue study report.

#### J. POLLUTION PREVENTION PROGRAM

The canneries shall maintain the pollution prevention program developed in the previous permit period. The canneries shall submit an annual report documenting the effectiveness of the program and improvements to it. A copy of this report shall be available onsite.

#### K. DEFINITIONS

1. "Ambient conditions" means the existing conditions in the surrounding waters not influenced by the discharger's effluent.
3. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility whose operation is necessary to maintain compliance with the terms and conditions of this permit.
4. "Whole-effluent toxicity" is the aggregate toxic effect of an effluent measured directly with a "toxicity test."
5. "Composite sample" means, for other than flow rate measurements, the arithmetic mean of no fewer than eight individual measurements taken at equal intervals for 24 hours or for the duration of the discharge, whichever is shorter.

"Composite sample" means, for other than flow rate measurement,

- a. A combination of at least eight individual portions of equal time intervals for 24 hours, or the duration of the discharge, whichever is shorter. The volume of each individual portion shall be directly proportional to the discharge flow rate at the time of sampling.

OR

- b. A combination of at least eight individual portions of equal volume obtained over

a 24-hour period. The time interval will vary such that the volume of wastewater discharged between samplings remains constant.

The compositing period shall equal the specified sampling period, or 24 hours, if no period is specified.

6. “Daily discharge” means:
  - a. For flow rate measurement, the average flow rate measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling.
  - b. For pollutant measurements, the concentration or mass emission rate measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling.
7. “Daily maximum” limit means the maximum acceptable “daily discharge.” For pollutant measurements, unless otherwise specified, the results to be compared to the “daily maximum” limit are based on “composite samples.”
8. “Duly authorized representative” is one whose:
  - a. Authorization is made in writing by a principal executive officer or ranking elected official;
  - b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
  - c. Written authorization is submitted to the ASEPA and EPA. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements must be submitted to ASEPA and EPA prior to or together with any reports, information, or other applications to be signed by an authorized representative.
8. “Grab sample” is defined as any individual sample collected in a short period of time not

exceeding 15 minutes. “Grab samples” shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks. It is used primarily in determining compliance with “daily maximum” limits.

9. “Hazardous substance” means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.
10. “Heavy metals” are, for the purposes of this permit, arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc.
11. “Indirect discharger” means a non-domestic discharger introducing pollutants into a publicly owned treatment and disposal system.
12. “Initial dilution” is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristics of most municipal wastes that are released from the submarine outfalls, the momentum of the discharger and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

Numerically, initial dilution is expressed as the ratio of the volume of discharged effluent plus ambient water entrained during the process of initial dilution to the volume of discharged effluent.

13. “Mass emission rate” is obtained from the following calculations for any calendar day:

$$\text{Mass emission rate (lb/day)} = 8.345/N \sum_{i=1}^N Q_i C_i$$

$$\text{Mass emission rate (kg/day)} = 3.785/N \sum_{i=1}^N Q_i C_i$$

in which ‘N’ is the number of samples analyzed in any calendar day. ‘Q<sub>i</sub>’ and ‘C<sub>i</sub>’ are the flow rate (MGD) and the concentration (mg/L), respectively, which are associated with each of the ‘N’ grab samples which may be taken in any calendar day. If a composite sample is taken, ‘C<sub>i</sub>’ is the concentration measured in the composite sample and ‘Q<sub>i</sub>’ is the average flow rate occurring during the period over which samples are

composited.

The daily concentration of all constituents shall be determined from the flow-weighted average of the same constituents in the combined waste stream as follows:

$$\text{Daily concentration} = 1/Q_t \sum_{i=1}^N Q_i C_i$$

in which 'N' is the number of component waste streams. 'Q<sub>i</sub>' and 'C<sub>i</sub>' are the flow rate (MGD) and the constituent concentration (mg/L), respectively, which are associated with each of the 'N' waste streams. 'Q<sub>t</sub>' is the total flow rate of the combined waste streams.

14. "Monthly average" is the arithmetic mean of daily concentrations, or of daily "mass emission rates," over the specified monthly period:

$$\text{Average} = 1/N \sum_{i=1}^N X_i$$

in which 'N' is the number of days samples were analyzed during the period and 'X<sub>i</sub>' is either the constituent concentration (mg/L) or mass emission rate (kg/day or lb/day) for each sampled day.

15. "100-year frequency flood" means a flood of unusually large magnitude and which is characterized by its infrequent occurrence.
16. "Open coastal waters" means marine waters bounded by 100 fathom (183 m; 600 ft) depth contour and the shoreline excluding bays named in section 24.0205 (e)(1)-(3) of the American Samoa water quality standards.
17. "Overflow" means the intentional or unintentional diversion of flow from the collection and transport systems, including the pumping facilities.
18. "Pesticides" are, for purposes of this permit, those six constituents referred to in 40 CFR 125.58 (m) (demeton, guthion, malathion, mirex, methoxychlor, and parathion).
19. "Pollutant-free wastewater" means infiltration and inflow, cooling waters, and condensates which are essentially free of pollutants.

20. "Priority pollutants" are those constituents referred to in 40 CFR 401.15 and listed in the EPA NPDES Application Form 2C, pp. V-3 through V-9.
21. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a "bypass" or "overflow." It does not mean economic loss by delays in production.
22. "Sludge" means the solid, semi-liquid suspension of solids, residues, screenings, grit, scum, and precipitates separated from, or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow/underflow in the solids handling parts of the wastewater treatment system.
23. "Toxic pollutant" means any pollutant listed as toxic under Section 307 (a) (1) of the Clean Water Act or under 40 CFR 122, Appendix D. Violation of the maximum daily discharge limitations are subject to the 24-hour reporting requirement (section P.13.f).
24. "Toxicity test" is the means to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of response of an exposed test organism to a specific chemical or effluent.
25. "Toxic unit chronic" is the reciprocal of the effluent dilution that causes no unacceptable effect on the test organisms by the end of the chronic exposure period.
26. "Upset" means any exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations in the permit because of factors beyond the reasonable control of the discharger. It does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, careless or improper operation, or those problems the discharger should have foreseen.
27. "Waste", "waste discharge", "discharge of waste", and "discharge" are used interchangeably in this permit. The requirements of this permit are applicable to the entire volume of water, and the material therein, which is disposed of to marine waters.

28. “Weekly average” is the arithmetic mean of daily concentrations, or of daily mass emission rates, over the specified weekly period:

$$\text{Average} = \frac{1}{N} \sum_{i=1}^N X_i$$

in which ‘N’ is the number of days samples were analyzed during the period and “Xi” is either the constituent concentration (mg/L) or the “mass emission rate” (kg/day or lb/day) for each sampled day.

29. “Zone of initial dilution” (ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, providing that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards [40 CFR 125.58 (W)]. For purposes of designating monitoring stations, the region within a horizontal distance equal to a specified water depth (usually depth of outfall or average depth of diffuser) from any point of the diffuser or end of the outfall and the water column above and below that region, including the underlying seabed.
30. “Zone of mixing” (ZOM) means limited areas around outfalls and other facilities approved by ASEQC with the concurrence of EPA to allow for the initial dilution of waste discharges [American Samoa Water Quality Standards].

#### L. QUALITY ASSURANCE/QUALITY CONTROL

All waste material sampling procedures, analytical protocols, and quality assurance/quality control procedures shall be performed in accordance with guidelines specified by EPA. The following references shall be used by the permittee where appropriate:

1. EPA, 40 CFR 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act;
2. Tetra Tech, Inc. 1985. Summary of the U.S. EPA-approved methods and other guidance for 301 (h) monitoring variables. Final program document prepared for the Marine Operations Division, Office of Marine and Estuarine Protection, U.S. Environmental Protection Agency. EPA Contract No. 68-01-693. Tetra Tech, Inc., Bellevue, WA; and
3. Tetra Tech, Inc. 1986. Quality assurance and quality control guidance for 301 (h) monitoring programs. Final program document prepared for the Marine Operations

Division, Office of Marine and Estuarine Protection, U.S. Environmental Protection Agency. EPA Contract No. 68-01-3968. Tetra Tech, Inc., Bellevue, WA.

#### M. REPORTING

Monitoring results obtained during the previous 3 months shall be summarized for each month and submitted quarterly on forms to be supplied by EPA, to the extent that the information reported may be entered on the forms. The results of all monitoring required by this permit shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this permit. Monitoring reports shall be postmarked no later than the 28<sup>th</sup> day of the month following the completed reporting period. The first report is due 4 months after the effective date of this permit. Signed copies of these and all other reports required herein shall be submitted to the EPA and the Government of American Samoa at the following addresses:

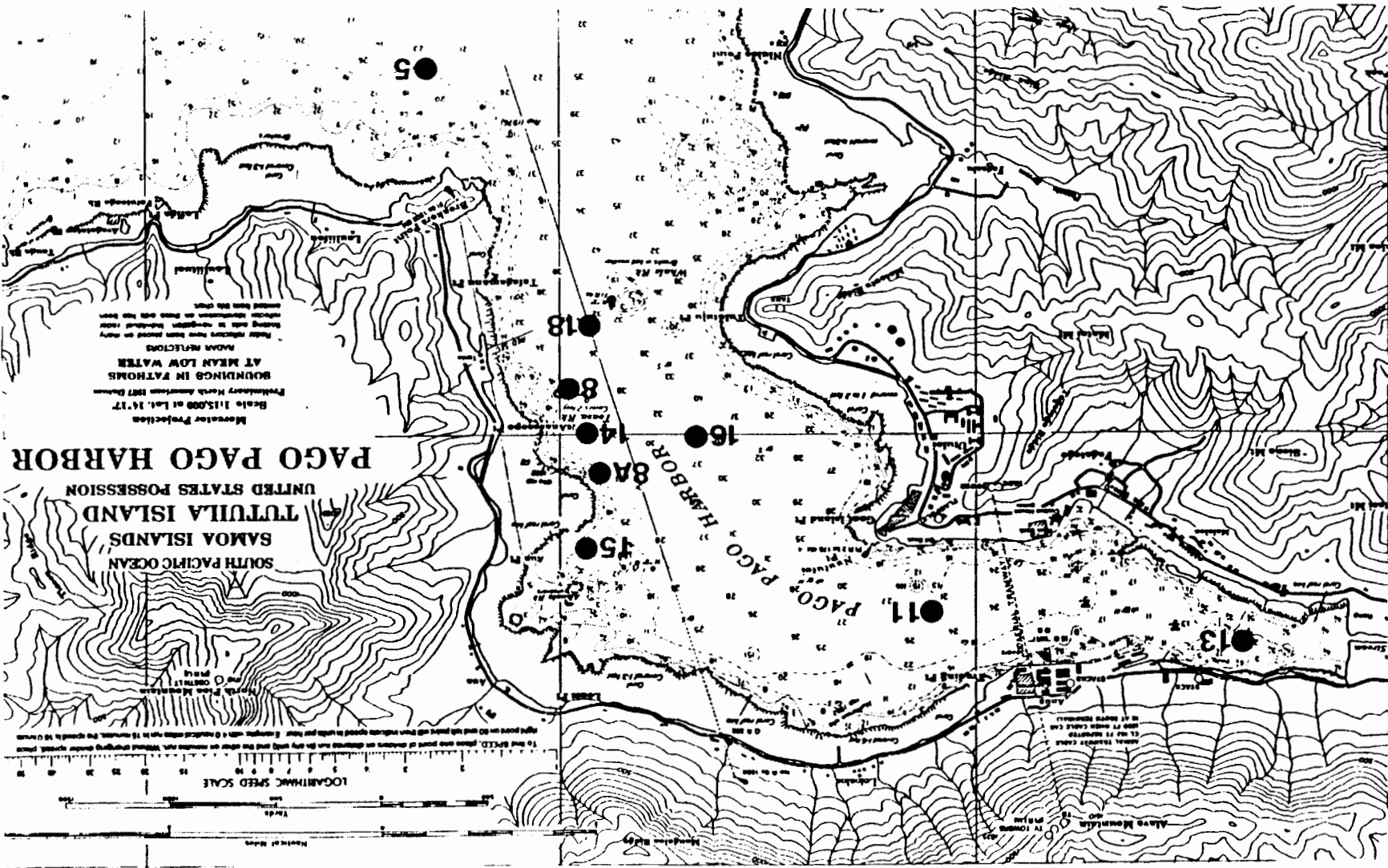
Environmental Protection Agency - Region 9  
Attn: Pacific Insular Area Programs (CMD-5)  
75 Hawthorne Street  
San Francisco, CA 94105

Director  
American Samoa Environmental Protection Agency  
Office of the Governor  
Pago Pago, American Samoa 96799

#### N. EPA REGION IX STANDARD CONDITIONS

See attachment.

Figure 1. Receiving Water Quality Monitoring Stations





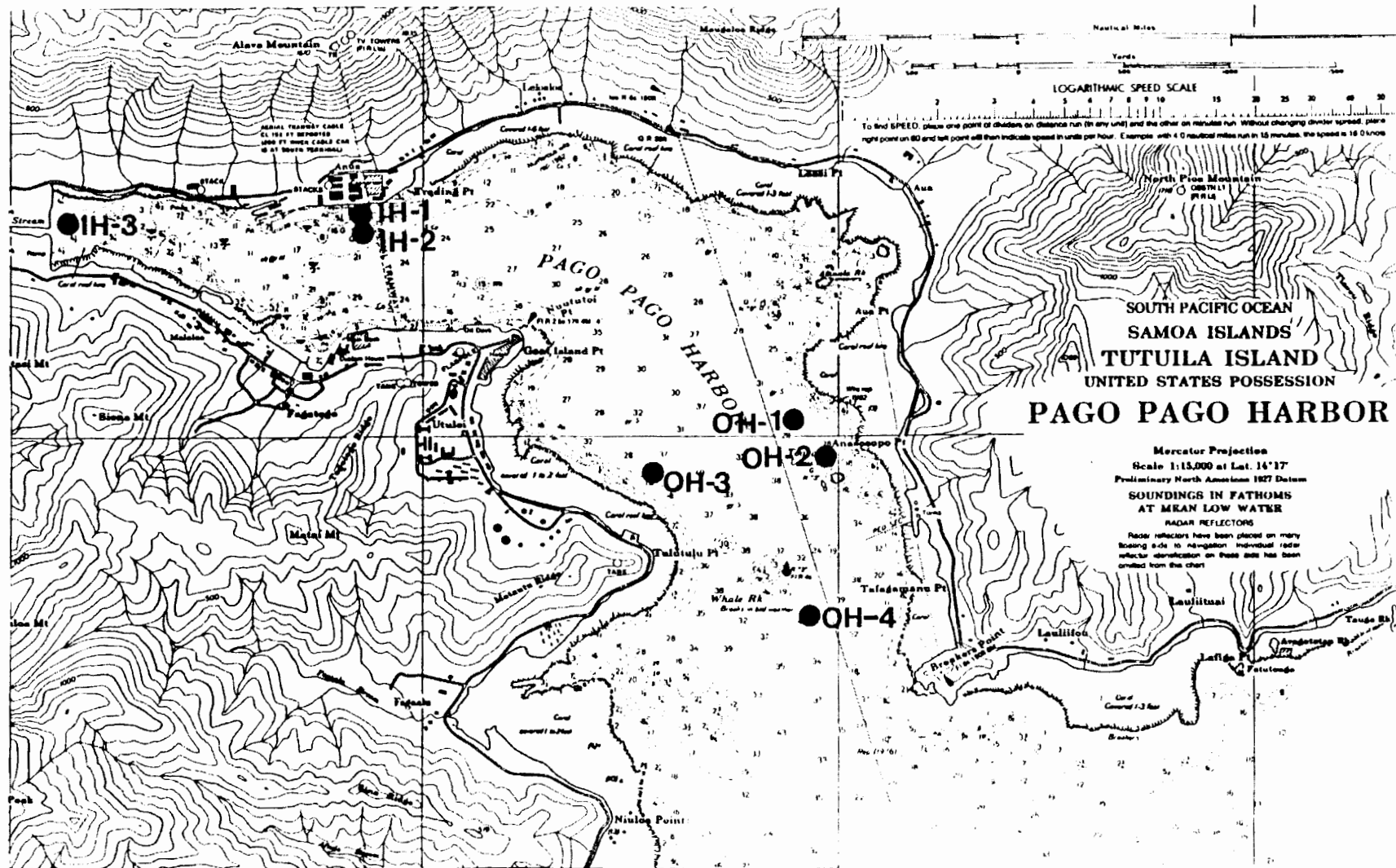


Figure 2. Sediment Monitoring Stations





# JOINT NOTICE OF PROPOSED ACTION

by the

U.S. Environmental Protection Agency  
Region 9 (WTR-5)  
75 Hawthorn Street  
San Francisco, CA 94105  
(415) 744-1914

Environmental Quality Commission  
American Samoa Government  
Pago Pago, American Samoa 96799  
(684) 633-2304

**Public Notice No.** PI-00-W-32

**Date:** October 30, 2000

The Environmental Protection Agency (EPA), Region 9, San Francisco, California and the American Samoa Environmental Quality Commission, Pago Pago, American Samoa are jointly issuing the following notice of proposed action under the Clean Water Act (CWA).

The Environmental Protection Agency, San Francisco, California has received complete applications for National Pollution Discharge Elimination Systems (NPDES) permits and has prepared tentative determinations regarding the permits.

On the basis of a review of the requirements of the CWA, as amended, the implementing regulations, the Regional Administrator, EPA Region 9, proposes to reissue NPDES permits to the following applicants, subject to certain effluent limitations and other conditions:

StarKist Samoa, Inc.  
P.O. Box 368  
Pago Pago, American Samoa 96799  
NPDES Permit No. AS0000019

and

COS Samoa Packing, Inc.  
P.O. Box 957  
Pago Pago, American Samoa 96799  
NPDES Permit No. AS0000027

StarKist Samoa and COS Samoa Packing Company operate tuna canneries on Tutuila Island, American Samoa. The canneries receive whole tuna which is processed into canned tuna and dried fish meal. Waste streams from these canneries consist mainly of fish waste, fresh water, and sea water which are treated by the Dissolved Air Flootation (DAF) process. The process waste streams from both canneries are discharged into Pago Pago Harbor.

Under proposed permit conditions, both canneries are required to meet final effluent limits for temperature, suspended solids, oil and grease, pH, nitrogen, phosphorus, ammonia, zinc, and copper. The proposed permits require that both canneries shall meet stringent final effluent limits that are based on American Samoa Water Quality Standards for Pago Pago Harbor. EPA has made a preliminary determination that the proposed permit would have no effect on any federally-listed threatened or endangered species.

The Administrative Records for the draft permits, which include the applications, draft permits, fact sheets, and all data sent by the applicant for the permits, are available for public inspection. The administrative records may be viewed Monday through Friday from 9:00 am until 4:00 pm at

the EPA address below. A copy of these documents may be obtained by calling (415) 744-1914 or writing to the address listed below.

Persons wishing to comment upon the draft permit or request a public hearing pursuant to 40 CFR 124.12 should submit their comments or requests in writing within 30 days from the date of this notice, either in person or by mail to:

U.S. Environmental Protection Agency, Region 9  
Clean Water Act Standards and Permits Office (WTR-5)  
Attn: Sara Roser  
75 Hawthorne Street  
San Francisco, California 94105  
Telephone: (415) 744-1914

Copies of the applications, draft permits, and fact sheets are also available for public review Monday through Friday from 8:00 am to 4:00 pm at the following office:

Environmental Quality Commission  
American Samoa Government  
Pago Pago, American Samoa 96799

Contact Person: Togipa Tausaga, Director

The Environmental Quality Commission is reviewing the draft permits and may:

1. certify the draft permits without comments; or
2. certify the draft permits and impose conditions more stringent than those contained therein; or
3. deny the certification of the draft permits.

All comments submitted within 30 days from the date of this notice will be considered in the formulation of the final permit. If the response to this notice indicates a significant degree of public desire for a public hearing, the Regional Administrator shall hold one in accordance with 40 CFR 124.12. A public notice of such hearing will be issued at least 30 days prior to the hearing. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

If the draft permits become final, and there are no appeals, discharge from and operation of the identified facilities may proceed or continue, subject to the conditions of the permits and other applicable permits and legal requirements.

EPA will prepare and issue a final permit after reviewing all comments received during the public comment period. If no comments are submitted on the draft permit, the final permit will become effective three (3) days from the date of mailing. If comments are submitted on the draft permit, the final permit will become effective 33 days from the date of mailing, unless a petition is filed with the Environmental Appeals Board (EAB) to review any conditions of the final

permit under 40 CFR 124.19(a), as revised at 65 Fed. Reg. 30886, 30911 (May 15, 2000). A copy of such petition should be sent to the EPA address listed above.

As stated in newly-revised 40 CFR 124.19(a), within 33 days after EPA issues the final permit, any person who filed comments on the draft permit or participated on the public hearing may petition the EAB to review any condition of the permit decision. Any person who failed to file comments or failed to participate in a public hearing on the draft permit may petition for administrative review only with regard to changes made from the draft permit to the final permit. The petition shall include a statement of the reasons supporting the review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations and, when appropriate, a showing that the condition in question is based on: (1) a finding of fact or conclusion of law which is clearly erroneous; or (2) an exercise of discretion or an important policy consideration which the EAB should, in its discretion, review. Under 40 CFR 124.16 and 124.60, a petition for review under 40 CFR 124.19 stays the force and effect of the contested conditions of the final permit until final agency action under 40 CFR 124.19(f).

Please bring the foregoing notice to the attention of all persons you know would be interested in this matter.

## JOINT NOTICE OF PROPOSED ACTION

by the

U.S. Environmental Protection Agency  
Region 9 (WTR-5)  
75 Hawthorne Street  
San Francisco, CA 94105  
(415) 744-1914

Environment Quality Commission  
American Samoa Government  
Pago Pago, American Samoa 96799  
(684) 633-2304  
Public Notice No. PI-00-W-32  
Date: October 30, 2000

### Public Notice No. PI-00-W-32

Date: October 30, 2000

The Environmental Protection Agency (EPA), Region 9, San Francisco, California and the American Samoa Environmental Quality Commission, Pago Pago, American Samoa are jointly issuing the following notice of proposed action under the Clean Water Act (CWA).

The Environmental Protection Agency, San Francisco, California has received complete applications for National Pollution Discharge Elimination Systems (NPDES) permits and has prepared tentative determinations regarding the permits.

On the basis of a review of the requirements of the CWA, as amended, the implementing regulations, the Regional Administrator, EPA Region 9, proposes to reissue NPDES permits to the following applicants, subject to certain effluent limitations and other conditions:

StarKist Samoa, Inc.  
P.O. Box 388  
Pago Pago, American Samoa 96799  
NPDES Permit No. AS0000019

and

COS Samoa Packing, Inc.  
P.O. Box 957  
Pago Pago, American Samoa 96799  
NPDES Permit No. AS0000027

StarKist Samoa and COS Samoa Packing Company operate tuna canneries on Tutuila Island, American Samoa. The canneries receive whole tuna which is processed into canned tuna and dried fish meal. Waste streams from these canneries consist mainly of fish waste, fresh water, and sea water which are treated by the Dissolved Air Floatation (DAF) process. The process waste streams from both canneries are discharged into Pago Pago Harbor.

Under proposed permit conditions, both canneries are required to meet final effluent limits for temperature, suspended solids, oil and grease, pH, nitrogen, phosphorus, ammonia, zinc, and copper. The proposed permits that both canneries shall meet stringent final effluent limits that are based on American Samoa Water Quality Standards for Pago Pago Harbor. EPA has made a preliminary determination that the proposed permit would have no effect on any federally-listed threatened or endangered species.

The Administrative Records for the draft permits, which include the applications, draft permits, fact sheets, and all data sent by the applicant for the permits, are available for public inspection. The administrative records may be viewed Monday through Friday from 9:00 a.m. until 4:00 p.m. at the EPA address below.

Persons wishing to comment upon the draft permit or request a public hearing pursuant to 40 CFR 124.12 should submit their comments or requests in writing within 30 days from the date of this notice, either in person or by mail to:

U.S. Environmental Protection Agency, Region 9  
Clean Water Act Standards and Permits Office (WTR-5)  
Sara Roser  
75 Hawthorne Street  
San Francisco, California 94105  
Telephone: (415) 744-1914

Copies of the applications, draft permits, and fact sheets are also available for public review Monday through Friday from 8:00 a.m. to 4:00 p.m. at the following office:

Environmental Quality Commission  
American Samoa Government  
Pago Pago, American Samoa 96799  
Contact Person: Toglpa Tausaga, Director

The Environmental Quality Commission is reviewing the draft permits and may:

1. certify the draft permits without comments; or
2. certify the draft permits and impose conditions more stringent than those contained therein; or
3. deny the certification of the draft permits.

All comments submitted within 30 days from the date of this notice will be considered in the formulation of the final permit. If the response to this notice indicates a significant degree of public desire for a public hearing, the Regional Administrator shall hold one in accordance with 40 CFR 124.12. A public notice of such hearing will be issued at least 30 days prior to the hearing. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

If the draft permits become final, and there are no appeals, discharge from and operation of the identified facilities may proceed or continue, subject to the conditions of the permits and other applicable permits and legal requirements.

EPA will prepare and issue a final permit after reviewing all comments received during the public comment period. If no comments are submitted on the draft permit, the final permit will become effective three (3) days from the date of mailing. If comments are submitted on the draft permit, the final permit will become effective 33 days from the date of mailing, unless a petition is filed with the Environmental Appeals Board (EAB) to review any conditions of the final permit under 40 CFR 124.19(a), as revised at 65 Fed. Reg. 30886, 30911 (May 15, 2000). A copy of such petition should be sent to the EPA address listed above.

As stated in newly-revised 40 CFR 124.19(a), within 33 days after EPA issues the final permit, any person who filed comments on the draft permit or participate on the public hearing may petition the EAB to review any condition of the permit decision. Any person who failed to file comments or failed to participate in a public hearing on the draft permit may petition for administrative review only with regard to changes made from the draft permit to the final permit. The petition shall include a statement of the reasons supporting the review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations and, when appropriate, a showing that the condition in question is based on: (1) a finding of fact or conclusion of law which is clearly erroneous; or (2) an exercise of discretion or an important policy consideration which the EAB should, in its discretion, review. Under 40 CFR 124.16 and 124.60, a petition for review under 40 CFR 124.19 stays the force and effect of the contested conditions of the final permit until final agency action under 40 CFR 124.19(f).

Please bring the foregoing notice to the attention of all persons you know would be interested in this matter.

one page

To: Carl Goldstein  
From: Joshua Craig, ASETH





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

October 24, 2000

Herman Gebauer, General Manager  
COS Samoa Packing, Inc.  
P.O. Box 957  
Pago Pago, American Samoa 96799

Re: COS Samoa Packing, Inc.  
NPDES Permit No. AS0000027

Dear Mr. Gebauer:

Enclosed is the draft NPDES permit, a fact sheet, and a joint notice of proposed action for the COS Samoa Packing, Inc. The joint notice of proposed action will be published in a local newspaper shortly. The target date for publication is October 30, 2000. The formal public comment period will begin on the day the notice is published and will end 30 days from the date of the notice. Please review the enclosed documents and provide comments to EPA by the close of the comment period.

As stated in the joint notice of proposed action, please submit comments to:

U.S. Environmental Protection Agency, Region IX  
CWA Office of Permits and Standards, WTR-5  
Attn: Sara Roser  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Please contact me at (415) 744-1914 if you have any questions regarding the proposed permit.

Sincerely,

A handwritten signature in black ink, appearing to read "Sara Roser", is positioned above the typed name.

Sara Roser  
CWA Standards and Permits Office (WTR-5)

Enclosures

cc: Togipa Tausaga, ASEPA  
Margaret Dupree, National Marine Fisheries Service  
Paul Henson, US Fish and Wildlife Service  
Nancy Daschbach, National Marine Sanctuaries  
Jim Cox, COS Samoa Packing Company  
Mike Dworsky, American Samoa Power Authority  
Lelei Peau, Department of Commerce  
Department of Marine Resources, American Samoa Government  
Department of Public Safety, American Samoa Government

## **NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FACT SHEET**

Permittee's Name: COS Samoa Packing Company

Mailing Address: P.O. Box 957  
Pago Pago, Tutuila  
American Samoa 96799

Plant Location: Tutuila Island, American Samoa

Contact Person: Jim Cox  
Director of Engineering and Environmental Affairs

NPDES Permit No.: AS0000027

### **I. DESCRIPTION OF FACILITY**

The applicant operates a tuna cannery located on Tutuila Island, American Samoa. Process discharges from the cannery enter Pago Pago Harbor at 14 deg. 17 min. 01 sec. South latitude and 170 deg. 40 min. 02 sec. West longitude. The cannery receives whole tuna which is processed into canned tuna and dried fish meal. Waste streams from this operation consist mainly of fish waste, fresh water, and sea water which are treated by Dissolved Air Flootation process. The DAF sludge and the high strength waste (pre-cooker condensate, press juice, fish meal plant wash water, etc.) are barged to sea for disposal. Approximately 360 tons of fish are processed per day. The resulting discharge to Pago Pago Harbor has been a maximum monthly average of 0.72 MGD and a long-term average of 0.56 MGD.

The 1990 American Samoa Water Quality Standards were amended by the American Samoa Environmental Quality Commission (ASEQC), and the amended water quality standards were adopted by the EQC in 1999. Section 24.0205 (e)(1) of the 1999 standards states that "Pago Pago Harbor has been designated by the American Samoa Government to be developed into a transshipment center for the South Pacific. Recognizing its unique position as an embayment where water quality has been degraded from the natural condition, the EQC has established a separate set of standards for Pago Pago Harbor." Section 24.0206 (m) specifies the standards that apply specifically to Pago Pago Harbor.

Administrative orders were issued by EPA in June 1990 to both StarKist Samoa and Samoa Packing Company for violations of water quality-based effluent limits of their respective 1987 NPDES permits. The orders established interim effluent limits and a schedule for compliance with water quality-based effluent limits by March 7, 1992. Concurrently, the American Samoa Government (ASG) also issued consent decrees

mirroring EPA's compliance orders, with stipulated penalties for failure to meet interim effluent limits and compliance schedule deadlines.

Prior to the previous permit, both canneries were required by the orders and consent decrees to segregate high strength waste streams and dispose of these wastes and DAF sludge at a designated ocean disposal site beginning in August 1990. Feasibility studies were also required to be conducted by both canneries for alternatives by which they could achieve compliance with their NPDES permit effluent limits and ASG water quality standards for their remaining discharge into the harbor. The canneries chose to construct a 7,000-foot joint outfall which extends into the outer harbor. The outfall is jointly operated by both canneries for discharge of their effluent.

The two canneries previously applied for a mixing zone consistent with the requirements set forth in Section 24.0207 of the American Samoa Water Quality Standards. The mixing zone requested extends approximately 1300 feet in radius from the discharge point. The mixing zone was approved by the ASEQC on November 27, 1991.

Discharge in compliance with this NPDES permit should ensure achievement of all applicable water quality standards. These standards are designed to prevent degradation of water quality. Therefore, compliance with this NPDES permit should prevent any "unreasonable degradation" of the marine environment, and in accordance with section 403(c) of the Clean Water Act, a NPDES permit may be issued.

## II. EFFLUENT LIMITATIONS

Discharges from fish processing facilities are not subject to any effective EPA effluent limitations guidelines. Therefore, permit requirements were established using best professional judgment and specific water quality standards in order to ensure protection of the beneficial uses of the receiving waters.

### A. pH

The Best Practicable Technology (BPT) limit for pH is "within the range of 6.0 to 9.0. However, water quality standards listed under 24.0206 (m) state: "The pH range shall be 6.5 to 8.6 and be within 0.2 pH units of that which would occur naturally." Because the water quality standards are more stringent, and because the mixing zone application states that "other water quality standards (beside total nitrogen, total phosphorus and temperature) will be met within the zone of mixing (e.g. pH, fecal coliform) ..." the more stringent standard will apply as the limit.

## B. Temperature

Water quality standards specify a temperature limit of 85° F which is to apply to water at the edge of the mixing zone. It is the best professional judgement of this permit writer, that the water will cool at least 10° from the point it enters the discharge pipe to the edge of the mixing zone. Furthermore, modeling studies were performed by the canneries' consultant assuming the effluent was 85° F and 90° F with no significant difference in dilution rates. Therefore, the permit limit contains a 90° F monthly average and a 95° F daily maximum.

## C. Oil and Grease

40 CFR 408.140 sets the BPT limit for oil and grease at a daily maximum of 2.1 lbs/1000 lbs of seafood processed and a monthly average of 0.84 lbs/1000 lbs of seafood processed. Limits for oil and grease were calculated by multiplying the BPT limits stated above, by the average daily production level of 360 tons seafood processed/day. Thus the daily maximum for oil and grease is set at 1512 lbs/day and the monthly average at 605 lbs/day.

## D. Total Suspended Solids

Limits were set for Total Suspended Solids (TSS) using the same rationale detailed in Section C (Oil and Grease). 40 CFR 408.140 sets the BPT limit for TSS at a daily maximum of 8.3 lbs/1000 lbs of seafood processed and a monthly average of 3.3 lbs/1000 lbs of seafood processed. Limits for TSS were calculated by multiplying the BPT limits stated above, by the average daily production level of 360 tons seafood processed/day. Thus the daily maximum for TSS is set at 5976 lbs/day and the monthly average at 2376 lbs/day.

## E. Total Nitrogen

The mixing zone analysis performed by the canneries' consultant, CH2M HILL, indicates that the mixing zone can assimilate 60,000 lbs. of total nitrogen per month. Assuming a 30-day month, an average of 2,000 lbs. of total nitrogen/day can be discharged between the two canneries. The two canneries have agreed between themselves to each assume a portion of this average. Samoa Packing will assume 800 lbs/day as a monthly average limit for total nitrogen.

The canneries are required to sample once/month for total nitrogen on production days. Averaging only these samples will yield a number that assumes weekend values are equal to production days. The canneries have claimed that they discharge significantly less nutrients on the weekends. Therefore, should the permittee wish to monitor the effluent on a non-production day(s), the permittee must monitor for the six consecutive days following the non-production day on which the first sample was taken. The average of all samples taken during that month will determine compliance with the "monthly average."

This requirement will ensure that the monitoring is representative of the discharge, and if the canneries are in compliance with their monthly average limits, the mixing zone's capacity of 60,000 lbs/month of total nitrogen will not be exceeded.

Samoa Packing Company's daily maximum effluent limit for total nitrogen was 1,595 lbs/day, as set in EPA's Administrative Order of June 18, 1990. StarKist's daily maximum limit was 2,440 lbs/day, stated in EPA's letter of October 30, 1991, amending its Administrative Order. These limits were initially to be retained in the new permits. However, the canneries expressed a desire to allocate the total of 4,035 lbs/day between themselves. Since the combined number is the same, the canneries were permitted to do so. StarKist agreed to accept a limit of 2,100 lbs/day, and Samoa Packing Company agreed to a limit of 1,935 lbs/day.

The canneries have claimed that total nitrogen and total phosphorus levels in the effluent have no significant correlation to production levels, and their monitoring data supports such a statement (See Appendix B, "Technical Memorandum for Site-Specific Zone of Mixing Determination for Joint Cannery Outfall Project," CH2M HILL, August 26, 1991). Therefore these effluents limits for total nitrogen and total phosphorus do not limit the canneries' production levels.

#### F. Total Phosphorus

Limits were set for total phosphorus using the same rationale as that detailed in Section E (Total Nitrogen). The total assimilative capacity of the zone of mixing was calculated by CH2M HILL to be a monthly average of 400 lbs. of total phosphorus/day. This total was divided between the two canneries and Samoa Packing has agreed to assume a monthly average limit of 208 lbs. of total phosphorus/day.

The combined total of daily maximum limits set in the Administrative Orders was 580 lbs. of total phosphorus/day and will be retained in the current permits. The canneries agreed to reapportion their share of the total. Samoa Packing will assume a daily maximum of 271 lbs. of total phosphorus/day.

#### G. Toxicity

Determination of effluent limits for toxic substances must comply with 24.0206 (h) and 24.0206 (i). Section 24.0206 (h)(1) states, "All effluents containing materials attributable to the activities of man shall be considered harmful and not permissible until acceptable bioassay tests have shown otherwise."

Section 24.0207 (h)(3) states, "The chronic affect on test organisms outside a zone of mixing, if one exists, in the water body receiving the effluent in question shall not be less than that for waters of the same water body that are unaffected by the discharge of pollutant ..."

In its permit application, COS Samoa Packing reported that concentrations of ammonia, zinc, and copper exceed acute and chronic water quality criteria. Numerical limitations and/or monitoring requirements were placed in this permit on all known toxic constituents of the effluent. A monitoring requirement for acute toxicity is also included in this permit.

The water quality standards state at Section 24.0206(h)(3), "Compliance with the above standard shall be evaluated with a 96-hour bioassay or short-term method for estimating chronic toxicity ..." The permittee is required to conduct a semi-annual 96-hr static renewal acute bioassay on composite effluent samples using white shrimp *Penaeus vannamei* postlarvae. The white shrimp is a warm-water species that is currently being used in acute bioassays performed in labs in Hawaii. In the event that *P. vannamei* are not available for testing, *Mysidopsis bahia* may be used.

The permittee is also required to conduct at least one priority pollutant scan of the effluent prior to the application for renewal of the permit. Full or partial priority scans may be required in conjunction with semi-annual bioassay tests if toxicity tests indicate a need.

#### H. Ammonia

Prior to the previous permit, the canneries requested that they be exempt from the acute toxicity requirement within a mixing zone. The ASEQC approved this request. Little EPA guidance exists, however, to define a mixing zone in marine waters that prevents lethality to passing organisms. The technical support document for the canneries' zone of mixing application cites a few alternatives, but none seems appropriate to this situation.

The canneries' consultant proposed to use an 80:1 dilution. This dilution, according to their modeling, occurs 30 seconds after the effluent leaves the pipe. The area associated with an 80:1 dilution is approximately 12 meters. They claim that such a dilution will ensure no lethality to passing organisms.

EPA National Water Quality Criteria for unionized ammonia is 0.233 mg/l for marine waters. This value is the Criterion Maximum Concentration (CMC). Multiplying this 0.233 by 80 yields 18.64 mg/l. Referencing the manual "Tables of the fraction of Ammonia in the Undissociated form, for pH 6 to 9, temperature 30°C, TDS 0-300 mg/l, and salinity 5-35 g/kg," by H.P. Skarheim of the University of California, Berkeley, College of Engineering, and using a pH value of 8.5, temperature of 29°C, and salinity 35 g/kg (all characteristics of harbor waters), the unionized fraction of ammonia is 14 percent. Therefore the ammonia limit for the canneries is established at 133 mg/l.

#### I. Metals

Monitoring of cannery effluent for cadmium, chromium, lead, mercury, and zinc was required in the previous permit because metal readings in Pago Pago Harbor have been historically high. Cannery effluent was found to be in compliance for cadmium,

chromium, lead, and mercury. Continued effluent monitoring is no longer necessary for these parameters. However, concentrations of zinc and copper exceeded acute and chronic water quality criteria. The canneries shall conduct monthly monitoring of zinc and copper to determine current levels of these parameters and to ensure compliance with the discharge limitations.

The canneries' consultant reported that zinc and copper are unavoidable outcomes of processing due to the machinery and equipment used. Consequently, the canneries have applied to the ASEPA for a zone of mixing for these metals. Monitoring of ambient receiving water indicated background zinc concentrations of less than 20 ug/l and copper concentrations of less than 0.5 ug/l. Significant initial dilution should ensure no toxicity from metals within the zone of mixing.

Analysis of nine sets of data gathered from semi-annual effluent monitoring resulted in the calculation of maximum expected effluent concentrations. The expected maximum effluent concentration of zinc for StarKist Samoa is 324 ug/l, 1254 ug/l for COS Samoa Packing, and 513 ug/l for the joint outfall. The expected maximum effluent concentration of copper for StarKist Samoa is 35 ug/l, 55 ug/l for COS Samoa Packing, and 36 ug/l for the joint outfall. The canneries consultant incorporated these maximum expected effluent concentrations in determining that a dilution of 25:1 would be sufficient to reduce maximum measured concentrations within approximately 4 to 6 meters from the discharge ports of the diffuser. Using background and effluent information, the dilution required to meet water quality criteria was calculated as follows:

$$D_R = (C_E - C_A) / (C_S - C_A)$$

where:

$D_R$  is the dilution required to reduce the concentration ( $C_E$ ) to  $C_S$

$C_E$  is the effluent concentration

$C_S$  is the concentration desired (water quality criteria)

$C_A$  is the ambient receiving water concentration

The canneries' consultant predicts the maximum exposure time of an organism entrained in the discharge plume to be less than 10 to 12 seconds.

EPA National Recommended Water Quality Criteria lists the criterion maximum concentration (CMC) for zinc in saltwater as 90 ug/l. The criterion continuous concentration (CCC) for zinc in saltwater is 81 ug/l. Discharge limitations were determined by using the equation described above and solving for  $C_E$ . The daily maximum for zinc, based on the CMC, is 1770 ug/l, and the 30-day average, based on the CCC, for each cannery is 1545 ug/l.

For copper in saltwater, the EPA National Recommended Water Quality Criteria lists the CMC as 4.8 ug/l and the CCC as 3.1 ug/l. Using the same equation described above, the

daily maximum, based on the CMC, is 108 ug/l, and the 30-day average, based on the CCC, is 66 ug/l for each canneries' discharge limitations.

#### J. Pago Pago Harbor Monitoring Program

Because the discharge point was moved to a less degraded portion of the harbor, a monitoring program was designed to assess the environmental impacts of the canneries' discharge on that area and to ensure compliance with the water quality standards. Results of the previously conducted monitoring program verified modeling predictions and eliminated the need to conduct further dye or tracer, harbor-wide circulation, or eutrophication studies. The current constituents of the program are as follows:

##### 1. Quantitative Data

Temperature, pH, dissolved oxygen, total suspended solids, light penetration, turbidity, salinity, chlorophyll a, total nitrogen, total phosphorus, total ammonia, copper and zinc are all measured to ensure compliance with numerical limits of the receiving water.

##### 2. Sediment Monitoring

Sediment monitoring will determine sediment character in relation to long-term nutrient discharge to the harbor by the permittee and the effect of nutrient resuspension on harbor recovery. The canneries (StarKist Samoa and COS Samoa Packing) shall cooperatively perform a sediment monitoring program in Pago Pago Harbor in order to assess the concentration of nutrient and organic components, the distribution of stored nutrients, the size of the nutrient reservoir and the rate of accumulation of nutrients.

##### 3. Coral Reef Survey

Although previous studies have shown no coral reef degradation attributable to the discharge, continued monitoring on a less frequent basis of a subset of previously sampled sites will detect differences in the coral reef. Monitoring sites located near the discharge and in the middle and outer harbor will assess the potential impacts of the discharge on the coral reef.

##### 4. Fish Tissue Study

A fish tissue study, conducted concurrently with receiving water quality and sediment monitoring, will detect levels of selected parameters in the tissues of resident organisms in the harbor. Whole fish analysis of mullet, mackerel, and crab for lead, arsenic, mercury, PCBs (Aroclor 1260), selected pesticides (DDT, DDE, DDD), and dioxin shall be conducted. Within 120 days of permit issuance,



the permittee is required to submit a detailed fish tissue study plan to ASEPA and USEPA-Region 9 for comment and approval. The study will address potential sources and levels of these substances and is a follow-up study to previous monitoring performed by ASEPA.

#### 5. Sea Turtle Review

In conjunction with the fish tissue study, the canneries will retain a recognized expert to review the effluent chemistry and bioassay data to determine if there is any anticipated impact on sea turtles in Pago Pago Harbor. The canneries will provide a report of the findings to EPA and ASEPA concurrent with the fish tissue study report.

#### K. Wastewater Treatment System Evaluation

The permittee should be continuously seeking ways to improve the quality of its effluent. In order to foster that search, the previous permit included a requirement to hire an independent consultant to examine the plant and provide a report on possible improvements. The study was conducted, and the implemented recommendations resulted in improvements. It is no longer necessary to continue this study at this time.

#### L. Pollution Prevention Program

Monitoring and maintaining the pollution prevention program developed under the previous permit will continue to help reduce the amount of pollutants in the effluent and the receiving waters. Ways to reduce the amount of pollutants entering the harbor must continue to be examined.

### III. THREATENED AND ENDANGERED SPECIES

EPA reviewed information provided by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) to determine whether the discharge from the canneries would affect any endangered species or habitat in the waters around American Samoa. In a letter from the NMFS, dated September 5, 2000, three species that might be found in the waters around American Samoa were listed. Endangered humpback whales may be found offshore during the winter months. Threatened green turtles and endangered hawksbill turtles may occur in the nearshore waters throughout American Samoa. The same three species were listed in a letter from the FWS dated September 22, 2000.

Further telephone conversations with a member of the NMFS Protected Species Program have indicated that humpback whales rarely enter Pago Pago harbor. Discussions with

NMFS and the American Samoa Department of Marine and Wildlife Resources confirm that green and hawksbill turtles are spotted in the harbor. Due to the location of the outfall and the ample dilution that the discharge undergoes, we would expect the discharge authorized by this NPDES permit to cause NO EFFECT on the threatened and endangered species listed in the waters of American Samoa.

The permit contains provisions for monitoring conventional and nonconventional pollutants, and requirements for whole effluent toxicity testing in compliance with ASEP standards, to ensure an appropriate level of water quality discharged by the canneries. The permit also requires review of effluent chemistry and bioassay data by a recognized expert to determine any possible impact to turtles in Pago Pago Harbor. Reopener clauses have been included should new information become available to indicate that the requirements of the permit need to be changed.

In considering all information available during the drafting of this permit, EPA believes that a NO EFFECT determination is appropriate for this federal action. A copy of the draft fact sheet and permit were forwarded to NMFS and FWS for review and comment during the pre-public notice review period and 30-day public review period.

#### IV. ADMINISTRATIVE INFORMATION

##### A. Public Notice (40 CFR §124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to a NPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit.

Public notice for this permit was given in the Samoa News on October 30, 2000.

##### B. Public Comment Period (40 CFR §124.10)

Notice of this permit was placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA.

After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued. The permittee, in conjunction with its consultant, and the Department of Marine and Wildlife Resources were the only commenters. Responses to comments were provided with the final permit.

C. Public Hearing (40 CFR §124.12(c))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held when there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

D. State Certification (40 CFR §§124.53 and 124.54)

After the draft permit has been modified to include any relevant comments from the 30-day public comment period, the draft final permit is forwarded to American Samoa Environmental Protection Agency for CWA Section 401 certification. This certification ensures that the permit will comply with applicable Federal CWA standards as well as with American Samoa Water Quality Standards. EPA Region 9 will not issue this permit until a 401 certification is received.

V. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

U.S. Environmental Protection Agency, Region IX  
CWA Standards & Permits Office Mail Code: WTR-5  
75 Hawthorne Street  
San Francisco, California 94105-3901  
Telephone:(415)744-1914  
Sara Roser

VI. INFORMATION SOURCES

While developing effluent limitations, monitoring requirements and special conditions for the permit, the following information sources were used:

- A. NPDES Permit Application Form 1 and Form 2C, dated May 30, 1997.
- B. American Samoa Water Quality Standards. Revision adopted November 4, 1999.
- C. 40 CFR parts 122 and 408
- D. National Recommended Water Quality Criteria-Correction, April 1999. Environmental Protection Agency, Office of Water.

## RESPONSE TO COMMENTS

COS Samoa Packing Company  
NPDES Permit No. AS0000027

StarKist Samoa, Inc.  
NPDES Permit No. AS0000019

Comments on the draft permits for these facilities were received from COS Samoa Packing, their consultant, and the American Samoa Department of Marine and Wildlife Resources (DMWR).

### EFFLUENT LIMITATIONS

1. COS Samoa Packing Company and their consultant, CH2M HILL, commented in letters dated November 20, 2000 and November 22, 2000, respectively. Both comments questioned the flow limitation of 0.91 mgd in the draft permit. The previous permit, issued in 1992, originally set the flow limit at 0.72 mgd. During the previous permit cycle, modifications to the treatment plant resulted in improvements that allowed the flow limitation to be increased to 1.4 mgd.

Response: The comment points out an oversight by the permit writer of documented events that led to the increased flow limit during the previous permit cycle. The correct flow limitation of 1.4 mgd has since been incorporated into the current COS Samoa Packing permit limitations. No other changes in effluent limitations resulted from this action.

Additionally, the StarKist Samoa flow limitation was decreased from 2.9 mgd in the 1992 permit to 2.1 mgd in the draft permit. This decrease was erroneously based on reported maximum flows rather than the design flow. The error was corrected and no other discharge limitations were affected.

### THREATENED AND ENDANGERED SPECIES

2. DMWR commented on the occurrence of hawksbill and green turtles in Pago Pago Harbor. The draft fact sheet states that green turtles nest in the harbor and hawksbill turtles visit the harbor occasionally. DMWR comments stated that hawksbill turtles are regularly spotted and recovered in the harbor, in contrast to the statement in the fact sheet claiming hawksbill turtles as occasional visitors to the harbor.

Response: Further conversations with NMFS clarified two points presented in the fact sheet: (1) the frequency of sighting hawksbill turtles in the harbor has not been officially recorded, and (2) green turtles are not able to nest in the harbor because suitable nesting habitat is unavailable. Since definitive counts and descriptions are not available, the fact sheet has been revised to only generally state that “. . . green and hawksbill turtles are spotted in the harbor.”

3. American Samoa DMWR commented on the need to verify the NO EFFECT finding in

the Threatened and Endangered Species section of the fact sheet. DMWR suggested requiring the canneries to fund a research project, including tissue sampling of turtles found dead in the harbor, to determine the impact of the canneries' discharge on the turtle population of Pago Pago harbor.

Response: Effluent monitoring and bioassay data do not suggest that the canneries' discharge is affecting turtles in the waters of American Samoa. However, a section has been added to the canneries' Pago Pago Harbor monitoring program to address this point. The canneries are required to retain a recognized expert to review effluent chemistry and bioassay data to determine if there is any anticipated impact from the discharge on sea turtles in Pago Pago Harbor. The permit includes a reopener clause should the review indicate new information that the requirements of the permit need to be changed.



**Chicken<sup>OF</sup>THE<sup>SEA</sup>**  
INTERNATIONAL

November 20, 2000

U.S Environmental Protection Agency, Region IX  
CWA Office of Permits and Standards, WTR-5  
Attn: Sara Roser  
75 Hawthorne Street  
San Francisco, CA 94105-3901

RE: COS Samoa Packing Company  
NPDES Permit No. AS0000027

Dear Ms Roser:

We have reviewed the draft permit and have a comment concerning the DAF flow limit of .91 MGD as stated on page 2 of 16. We feel that the flow limit should be increased to 1.4 MGD since:

1. The 35 foot EIMCO DAF unit we have in place has a design flow limit of 1.4 MGD.
2. The cannery needs a higher limit during some times of heavy rain. We are not requesting increased nitrogen or phosphorus loading.
3. The extra flow-rate will not negatively affect the Zone of Mixing.
4. COS Samoa Packing Company currently has a daily flow limit through the DAF of 1.4 MGD granted by Terry Oda, Permits Issuance Section Water Management Division, in the last permit. Two letters from Mr. Oda are attached in addition to a supporting letter from Steve Costa of CH2M Hill.

Please consider this request as it is important for us to meet our permit requirements.

Sincerely,

James L. Cox, Director of Engineering  
Chicken of the Sea Intl.

CC: Carl Goldstein, USEPA, Region 9  
Sheila Wiegman, ASEPA  
Steve Costa, CH2M Hill

4/25/94



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Mr. Michael Macready  
General Manager  
VCS Samoa Packing Company  
P.O. Box 957  
Pago Pago, American Samoa 96799

Re: Increase in Flow Rate Limitation Under NPDES Permit AS0000027

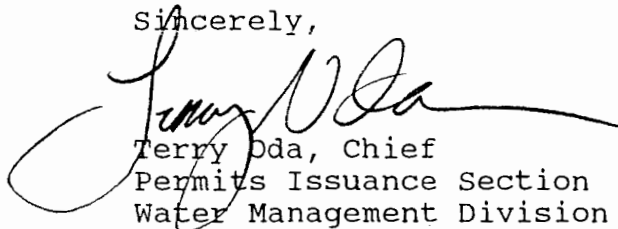
Dear Mr. Macready:

We recently received a letter from Steven Costa of CH2M Hill dated March 31, 1994, written on behalf of VCS Samoa Packing Company, which requested an increase in the daily maximum flow rate discharge limit under Samoa Packing's National Pollutant Discharge Elimination System Permit AS0000027. The increase requested is from 0.72 million gallons per day (mgd) to 1.40 mgd and is to take effect after installation of your facility's new Dissolved Air Flotation unit in May. Based on the information received in Mr. Costa's letter, EPA believes that neither the zone of initial dilution (ZID) nor the zone of mixing (ZOM) will be negatively affected by the increased flow rate.

By transmittal of this letter, VCS Samoa Packing Company is allowed to increase their daily maximum flow rate to 1.40 mgd. All other parameters, including the loading requirements, remain the same. EPA reserves the option to impose more stringent requirements should this increase in flow prove detrimental to the condition of the receiving water.

Please keep a copy of this letter with your NPDES permit. If you have any questions, you may contact me at (415) 744-1923 or Pat Young, American Samoa Program Manager, at (415) 744-1594.

Sincerely,



Terry Oda, Chief  
Permits Issuance Section  
Water Management Division

cc: Jim Cox, Van Camp Seafood Company  
Steven Costa, CH2M Hill  
Tony Tausaga, American Samoa EPA  
Sheila Wiegman, American Samoa EPA  
Norman Wei, Star-Kist Seafood Company  
Barry Mills, Star-Kist Samoa

NOV 12 1992



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, Ca. 94105-3901

NOV 09 1992

James L. Cox  
Director of Engineering and  
Environmental Affairs  
Van Camp Seafood Company, Inc.  
4510 Executive Drive, Suite 300  
San Diego, CA 92121-3029

Re: NPDES Permit No. AS0000019: Corrections to Permit and  
Modification of Flow Rate Parameter

Dear Mr. Cox:

Please note that typographical errors on page 2 of the National Pollution Discharge and Elimination System (NPDES) Permit No. AS0000019, recently issued to Samoa Packing Company, have been corrected:

1. Footnote for biochemical oxygen demand (5-day) changed from (6) to (5). Note (5) refers to "No limit set at this time."
2. The spelling of the word "oxygen" in "Biochemical Oxygen Demand".
3. The second sentence in paragraph 2 now reads, "The effluent shall be sampled prior to its commingling with effluent from the other cannery." (The words "commingling" and "cannery" had been misspelled).

Please replace page 2 of the permit with the attached corrected version (Attachment 1).

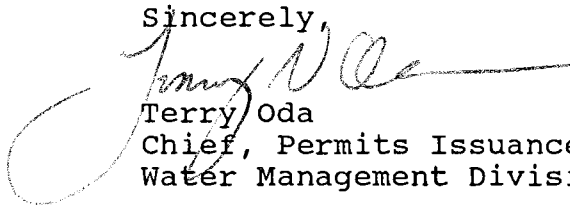
In another matter, your letter of October 29, 1992 requested an increased effluent flow rate limit from the existing permit limit of .72 MGD to 1.4 MGD if the existing Dissolved Air Flotation (DAF) unit is replaced with a new EIMCO 35-foot diameter unit. This modification to the flow rate of the permit is granted and will take effect upon receipt of information confirming installation of the new DAF unit, and written confirmation that the dilution of the effluent within the Zone of Initial Dilution and Zone of Mixing will not be negatively affected by the increased flow rate. All other permit parameter limits shall remain in effect.



-2-

Should you have any questions regarding the above, please contact Pat Young at (415) 744-1591 or Doug Liden at (415) 744-1921.

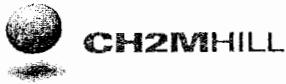
Sincerely,

A handwritten signature in dark ink, appearing to read "Terry Oda", is written over the typed name and title.

Terry Oda  
Chief, Permits Issuance Section  
Water Management Division

Attachment

cc: Michael Macready, Samoa Packing Company  
Pati Faiai, ASEPA  
Sheila Wiegman, ASEPA



216 Driftwood Lane  
P.O. Box 1238  
Trinidad, CA 95570  
707-677-0123

November 22, 2000

Sara Roser  
U.S Environmental Protection Agency, Region 9  
CWA Office of Permits and Standards, WTR-5  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Dear Sara:

**Re: COS Samoa Packing Company (NPDES Permit No. AS0000027)**

I have discussed the draft NPDES renewal permit conditions with Jim Cox and he was concerned about the flow limitation, which appears to be a decrease from the currently permitted levels. When the current permit was issued the flow limitation was set at 0.72 mgd based on the capacity of the existing DAF treatment system. At that time the cannery was aware that a larger DAF was required. Studies performed by the cannery and CH2M HILL, and required by Section K of the permit, resulted in a DAF upgrade with a hydraulic design capacity of 1.4 mgd. EPA Region 9 had previously agreed that if such an upgrade were carried out the permit would be amended to 1.4 mgd. The treatment plant was modified and the permit limitation subsequently adjusted.

COS Samoa Packing is concerned that the draft renewal permit flow limitation, which has been reduced to 0.91 mgd, will not be sufficient during heavy rainfall events. Such events are not uncommon in Pago Pago, where the annual rainfall often exceeds 250 inches per year.

When the original permit change was made from 0.72 to 1.4 mgd CH2M HILL provided an analysis of the higher discharge and demonstrated that the outfall and diffuser could easily handle the increased flow with no degradation in dilution performance. The increased flow does not increase the permit limits for nitrogen and phosphorus loading and does not change the sizes of the mixing zones for ammonia, copper, or zinc. The increased flows are only anticipated by COS Samoa Packing for short periods. There appears to be no technical or regulatory reason for the flow reduction, and we support COS Samoa Packing's request to maintain the existing permit limit of 1.4 mgd.

Thank you for your time and consideration of this matter, please call me if you have any questions or concerns,

Sincerely

CH2M HILL  
Steven L. Costa

cc: Carl Goldstein, USEPA, Region 9  
Sheila Wiegman, ASEPA  
Jim Cox, COS Intl



216 Driftwood Lane  
P.O. Box 1238  
Trinidad, CA 95570  
707-677-0123

November 22, 2000

Sara Roser  
U.S Environmental Protection Agency, Region 9  
CWA Office of Permits and Standards, WTR-5  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Dear Sara:

**Re: COS Samoa Packing Company (NPDES Permit No. AS0000027)**

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COS Samoa Packing is concerned that the draft renewal permit flow limitation, which has been reduced to 0.91 mgd, will not be sufficient during heavy rainfall events. Such events are not uncommon in Pago Pago, where the annual rainfall often exceeds 250 inches per year.

When the original permit change was made from 0.72 to 1.4 mgd CH2M HILL provided an analysis of the higher discharge and demonstrated that the outfall and diffuser could easily handle the increased flow with no degradation in dilution performance. The increased flow does not increase the permit limits for nitrogen and phosphorus loading and does not change the sizes of the mixing zones for ammonia, copper, or zinc. The increased flows are only anticipated by COS Samoa Packing for short periods. There appears to be no technical or regulatory reason for the flow reduction, and we support COS Samoa Packing's request to maintain the existing permit limit of 1.4 mgd.

Thank you for your time and consideration of this matter, please call me if you have any questions or concerns,

Sincerely

A handwritten signature in black ink, appearing to read "Steven L. Costa", written over a horizontal line.

CH2M HILL  
Steven L. Costa

cc: Carl Goldstein, USEPA, Region 9  
Sheila Wiegman, ASEPA  
Jim Cox, COS Intl

# DEPARTMENT OF MARINE & WILDLIFE RESOURCES



TAUESSE P. F. SUNIA  
Governor

TOGIOLA T. TULAPONO  
Lt. Governor

AMERICAN SAMOA GOVERNMENT  
P.O. BOX 3730  
PAGO PAGO, AMERICAN SAMOA 96799  
TEL: (684) 633-4456  
FAX: (684) 633-5944



UPAGAPĀ RAY TULAPONO  
Director

ASILA PHILIP LANGFORD  
Deputy Director

## FAX TRANSMITTAL SHEET

Date: 11/29/00

Number of Pages (including this page): 7

To: Sara Roser  
CWA Standards and Permit Office  
EPA, Region IX

From: Marie-Claude Filteau  
Senior Fishery Biologist

Fax No.: (415) 744-1873  
Phone No.: (415) 744-1914

Fax No.: (684) 633-5944  
Phone No.: (684) 633-4456

### MESSAGE:

Dear Ms. Roser,

Here are attached the revised pages regarding the Section III, Threatened and Endangered Species, of the NPDES for COS Samoa Packing & Starkist Samoa canneries.

Here are the modifications that should be done:

- Cross out "may" in the statement "Threatened green turtles and endangered hawksbill turtles may occur in the nearshore waters throughout American Samoa."
- Cross out "Green turtles, however, nest in the harbor." (COS)  
"while green turtles nest in the harbor." (Starkist)
- Cross out "and hawksbill turtles only visit the harbor occasionally"  
and replace by "and hawksbill turtles have been regularly spotted and recovered from the harbor."

- **After** "we would expect the discharge authorized by this NPDES permit to cause NO EFFECT on the threatened and endangered species listed in American Samoa."  
**add these statements:** "However, to verify this hypothesis, COS Samoa Packing Company (or Starkist Samoa Inc. accordingly) should fund a research project, undertaken by a Turtle Specialist, on the effect of cannery discharge on the Turtle population of the Pago Pago Harbor. This project must include a toxicology study (tissue sampling) on turtles found dead in the harbor."

If you have any further questions, please feel free to contact me anytime.

Respectfully Yours



Marie-Claude Filteau

MarieC\_Filteau@hotmail.com

Page 1 of 10

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT  
FACT SHEET**

**Permittee's Name:** COS Samoa Packing Company

**Mailing Address:** P.O. Box 957  
Pago Pago, Tutuila  
American Samoa 96799

**Plant Location:** Tutuila Island, American Samoa

**Contact Person:** Jim Cox  
Director of Engineering and Environmental Affairs

**NPDES Permit No.:** AS0000027

**I. DESCRIPTION OF FACILITY**

The applicant operates a tuna cannery located on Tutuila Island, American Samoa. Process discharges from the cannery enter Pago Pago Harbor at 14 deg. 17 min. 01 sec. South latitude and 170 deg. 40 min. 02 sec. West longitude. The cannery receives whole tuna which is processed into canned tuna and dried fish meal. Waste streams from this operation consist mainly of fish waste, fresh water, and sea water which are treated by Dissolved Air Floatation process. The DAF sludge and the high strength waste (pre-cooker condensate, press juice, fish meal plant wash water, etc.) are barged to sea for disposal. Approximately 360 tons of fish are processed per day. The resulting discharge to Pago Pago Harbor has been a maximum monthly average of 0.72 MGD and a long-term average of 0.56 MGD.

The 1990 American Samoa Water Quality Standards were amended by the American Samoa Environmental Quality Commission (ASEQC), and the amended water quality standards were adopted by the EQC in 1999. Section 24.0205 (e)(1) of the 1999 standards states that "Pago Pago Harbor has been designated by the American Samoa Government to be developed into a transshipment center for the South Pacific. Recognizing its unique position as an embayment where water quality has been degraded from the natural condition, the EQC has established a separate set of standards for Pago Pago Harbor." Section 24.0206 (m) specifies the standards that apply specifically to Pago Pago Harbor.

Administrative orders were issued by EPA in June 1990 to both StarKist Samoa and Samoa Packing Company for violations of water quality-based effluent limits of their respective 1987 NPDES permits. The orders established interim effluent limits and a schedule for compliance with water quality-based effluent limits by March 7, 1992. Concurrently, the American Samoa Government (ASG) also issued consent decrees

② However, to verify this hypothesis, COS Samoa Packing company should fund a research project, undertaken by a Turtle Specialist on the effect of cannerly discharge on the turtle population of the Pago Pago Harbor. Page 8 of 10

the permittee is required to submit a detailed fish tissue study plan to ASEPA and USEPA-Region 9 for comment and approval. The study will address potential sources and levels of these substances and is a follow-up study to previous monitoring performed by ASEPA. This project must include a toxicology study (tissue sampling) on turtles found dead in the Harbor.

#### K. Wastewater Treatment System Evaluation

The permittee should be continuously seeking ways to improve the quality of its effluent. In order to foster that search, the previous permit included a requirement to hire an independent consultant to examine the plant and provide a report on possible improvements. The study was conducted, and the implemented recommendations resulted in improvements. It is no longer necessary to continue this study at this time.

#### L. Pollution Prevention Program

Monitoring and maintaining the pollution prevention program developed under the previous permit will continue to help reduce the amount of pollutants in the effluent and the receiving waters. Ways to reduce the amount of pollutants entering the harbor must continue to be examined.

### III. THREATENED AND ENDANGERED SPECIES

EPA reviewed information provided by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) to determine whether the discharge from the canneries would affect any endangered species or habitat in the waters around American Samoa. In a letter from the NMFS, dated September 5, 2000, three species that would be found in the waters around American Samoa were listed. Endangered humpback whales may be found offshore during the winter months. Threatened green turtles and endangered hawksbill turtles may occur in the nearshore waters throughout American Samoa. The same three species were listed in a letter from the FWS dated September 22, 2000.

Further telephone conversations with a member of the NMFS Protected Species Program have indicated that humpback whales rarely enter Pago Pago harbor, and hawksbill turtles only visit the harbor occasionally. Green turtles, however, nest in the harbor. Due to the location of the outfall and the ample dilution that the discharge undergoes, we would expect the discharge authorized by this NPDES permit to cause NO EFFECT on the threatened and endangered species listed in the waters of American Samoa. ①

The draft permit contains provisions for monitoring conventional and nonconventional pollutants, and requirements for whole effluent toxicity testing in compliance with ASEPA standards, to ensure an appropriate level of water quality discharged by the canneries.

① have been regularly spotted and recovered from the Harbor.

② see top of the page

## **NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FACT SHEET**

**Permittee's Name:** StarKist Samoa, Inc.

**Mailing Address:** P.O. Box 368  
Pago Pago, Tutuila  
American Samoa 96799

**Plant Location:** Tutuila Island, American Samoa

**Contact Person:** Phil Thirkel, General Manager

**NPDES Permit No.:** AS0000019

### **I. DESCRIPTION OF FACILITY**

The applicant operates a tuna cannery located on Tutuila Island, American Samoa. Process discharges from the cannery enter Pago Pago Harbor at 14 deg. 17 min. 01 sec. South latitude and 170 deg. 40 min. 02 sec. West longitude. The cannery receives whole tuna which is processed into canned tuna and dried fish meal. Waste streams from this operation consist mainly of fish waste, fresh water, and sea water which are treated by Dissolved Air Floatation process. The DAF sludge and the high strength waste (pre-cooker condensate, press juice, fish meal plant wash water, etc.) are barged to sea for disposal. Approximately 454 tons of fish are processed per day. The resulting discharge to Pago Pago Harbor has been a maximum monthly average of 1.61 MGD and a long-term average of 1.27 MGD.

The 1990 American Samoa Water Quality Standards were amended by the American Samoa Environmental Quality Commission (EQC), and the amended water quality standards were adopted by the EQC in 1999. Section 24.0205 (e)(1) of the 1999 standards states that "Pago Pago Harbor has been designated by the American Samoa Government to be developed into a transshipment center for the South Pacific. Recognizing its unique position as an embayment where water quality has been degraded from the natural condition, the EQC has established a separate set of standards for Pago Pago Harbor." Section 24.0206 (m) specifies the standards that apply specifically to Pago Pago Harbor.

Administrative orders were issued by EPA in June 1990 to both StarKist Samoa and Samoa Packing Company for violations of water quality-based effluent limits of their respective 1987 NPDES permits. The orders established interim effluent limits and a schedule for compliance with water quality-based effluent limits by March 7, 1992. Concurrently, the American Samoa Government (ASG) also issued consent decrees



#### 4. Fish Tissue Study

A fish tissue study, conducted concurrently with receiving water quality and sediment monitoring, will detect levels of selected parameters in the tissues of resident organisms in the harbor. Whole fish analysis of mullet, mackerel, and crab for lead, arsenic, mercury, PCBs (Aroclor 1260), selected pesticides (DDT, DDE, DDD), and dioxin shall be conducted. Within 120 days of permit issuance, the permittee is required to submit a detailed fish tissue study plan to ASEPA and USEPA-Region 9 for comment and approval. The study will address potential sources and levels of these substances and is a follow-up study to previous monitoring performed by ASEPA.

#### K. Wastewater Treatment System Evaluation

The permittee should be continuously seeking ways to improve the quality of its effluent. In order to foster that search, the previous permit included a requirement to hire an independent consultant to examine the plant and provide a report on possible improvements. The study was conducted, and the implemented recommendations resulted in improvements. It is no longer necessary to continue this study at this time.

#### L. Pollution Prevention Program

Monitoring and maintaining the pollution prevention program developed under the previous permit will continue to help reduce the amount of pollutants in the effluent and the receiving waters. Ways to reduce the amount of pollutants entering the harbor must continue to be examined.

### III. THREATENED AND ENDANGERED SPECIES

EPA reviewed information provided by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) to determine whether the discharge from the canneries would affect any endangered species or habitat in the waters around American Samoa. In a letter from the NMFS, dated September 5, 2000, three species that would be found in the waters around American Samoa were listed. Endangered humpback whales may be found offshore during the winter months. Threatened green turtles and endangered hawksbill turtles may occur in the nearshore waters throughout American Samoa. The same three species were listed in a letter from the FWS dated September 22, 2000.

Further telephone conversations with a member of the NMFS Protected Species Program have indicated that humpback whales rarely enter Pago Pago harbor, and hawksbill turtles <sup>①</sup> ~~only visit the harbor occasionally while green turtles nest in the harbor.~~ Due to the   
 1 have been regularly spotted and recovered from the harbor.

FILE No. 296 11/29 '00 12:46 ID: ASG-MARINE WILDLIFE RES. FAX: 6846335944 PAGE 7

② However, to verify this hypothesis Starkist Samoa Inc. should fund a research project, undertaken by a Turtle Specialist, on the effect of cannery discharge on the turtle population of the Pago Pago Harbor. This project must include a toxicology study (tissue sampling) on turtles found dead in the Harbor location of the outfall and the ample dilution that the discharge undergoes, we would expect the discharge authorized by this NPDES permit to cause NO EFFECT on the threatened and endangered species listed in the waters of American Samoa. ②

The draft permit contains provisions for monitoring conventional and nonconventional pollutants, and requirements for whole effluent toxicity testing in compliance with ASEPA standards, to ensure an appropriate level of water quality discharged by the canneries. Reopener clauses have been included should new information become available to indicate that the requirements of the permit need to be changed.

In considering all information available during the drafting of this permit, EPA believes that a NO EFFECT determination is appropriate for this federal action. A copy of the draft fact sheet and permit were forwarded to NMFS and FWS for review and comment during the pre-public notice review period and 30-day public review period.

#### IV. ADMINISTRATIVE INFORMATION

##### A. Public Notice (40 CFR §124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to a NPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit.

Public notice for this permit will be given in a local newspaper.

##### B. Public Comment Period (40 CFR §124.10)

Notice of this permit will be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA.

After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

##### C. Public Hearing (40 CFR §124.12(c))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held when there is a significant amount of interest expressed



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

October 24, 2000

Herman Gebauer, General Manager  
COS Samoa Packing, Inc.  
P.O. Box 957  
Pago Pago, American Samoa 96799

Re: COS Samoa Packing, Inc.  
NPDES Permit No. AS0000027

Dear Mr. Gebauer:

Enclosed is the draft NPDES permit, a fact sheet, and a joint notice of proposed action for the COS Samoa Packing, Inc. The joint notice of proposed action will be published in a local newspaper shortly. The target date for publication is October 30, 2000. The formal public comment period will begin on the day the notice is published and will end 30 days from the date of the notice. Please review the enclosed documents and provide comments to EPA by the close of the comment period.

As stated in the joint notice of proposed action, please submit comments to:

U.S. Environmental Protection Agency, Region IX  
CWA Office of Permits and Standards, WTR-5  
Attn: Sara Roser  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Please contact me at (415) 744-1914 if you have any questions regarding the proposed permit.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sara Roser", is positioned above the typed name.

Sara Roser  
CWA Standards and Permits Office (WTR-5)

Enclosures

cc: Togipa Tausaga, ASEPA  
Margaret Dupree, National Marine Fisheries Service  
Paul Henson, US Fish and Wildlife Service  
Nancy Daschbach, National Marine Sanctuaries  
Jim Cox, COS Samoa Packing Company  
Mike Dworsky, American Samoa Power Authority  
Lelei Peau, Department of Commerce  
Department of Marine Resources, American Samoa Government  
Department of Public Safety, American Samoa Government



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion  
300 Ala Moana Boulevard, Room 3-122  
Box 50088  
Honolulu, Hawaii 96850

SEP 22 2000

In Reply Refer to: EAV

Suesan Saucerman  
U.S. Environmental Protection Agency  
Region IX - WTR - 5  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Re: Species List Request for American Samoa for a Review of Water Quality Standards

Dear Ms. Saucerman:

The U.S. Fish and Wildlife Service (Service) has received your letter dated August 1, 2000 requesting a species list of federally endangered, threatened, proposed, and candidate species, and critical habitat from American Samoa. We understand you are reviewing the Water Quality Standards for this area and require the species list for compliance with Section 7 of the ESA.

Based on information currently available to us, the following endangered (E) and threatened (T) species occur in American Samoa. There are no proposed species or critical habitat designations in American Samoa.

### Listed species

1. humpback whale (*Megaptera novaeangliae*) - E
2. green sea turtle (*Chelonia mydas*) - T
3. hawksbill turtle (*Eretmochelys imbricata*) - E

Please be advised that the National Marine Fisheries Service (NMFS) has jurisdiction over the humpback whale, and that NMFS and the U.S. Fish and Wildlife Service have joint jurisdiction over the green sea turtle and the hawksbill turtle.

In addition to the listed species shown above, there are several candidate species and species of concern in American Samoa. Candidate species and species of concern are not provided any legal protection by the ESA, but we encourage you to address these species to help avert the need to list them in the future.

Candidate species

1. sheath-tailed bat (*Emballonura semicaudata*)
2. friendly ground-dove (*Gallicolumba stairi*)
3. spotless crake (*Porzana tabuensis*)
4. many-colored fruit dove (*Ptilinopus perousii*)
5. Tutuila tree snail (*Eua zebrina*)
6. Sisi (snail; *Ostodes strigatus*)

Species of Concern

Animals

1. Samoan fruit bat (*Pteropus samoensis*)
2. Mt. Matafao snail (*Diastole matafoi*)
3. Sisi (snail; *Diastole schmeltziana*)
4. short Samoan tree snail (*Samoana abbreviata*)
5. Samoan tree snail (*Samoana conica*)
6. Ofu tree snail (*Samoana thurstoni*)
7. Sisi (snail; *Trochomorpha apia*)

Plants

8. *Acaronychia retusa* (no common name)
9. *Elatostema tutilense* (no common name)
10. *Habenaria monogyne* (no common name)
11. *Litsea samoensis* (no common name)
12. *Manikara dissecta* (no common name)

The above lists include all relevant species known to occur in American Samoa. Without more specific information about the nature of your project or the area(s) involved, the Service cannot offer any more precise assistance about the potential impact on particular species. We caution your agency that the distribution, status, and requirements of some of the listed and candidate species in American Samoa are poorly known, and additional information is needed.

The Service appreciates the opportunity to comment on this project. If you have any questions regarding this species list or require additional assistance, please contact Fish and Wildlife Biologist Eric VanderWerf in the Honolulu office by phone at (808) 541-3441 or by facsimile at (808) 541-3470.

Sincerely,



Paul Henson  
Field Supervisor  
Ecological Services

cc: John Naughton, NMFS



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic & Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southwest Region  
Pacific Island Area Office  
1601 Kapiolani Boulevard, Suite 1110  
Honolulu, Hawaii 96814-0047

United States EPA  
Region IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

September 5, 2000

Please refer to Consultation No: I-PI-00-07:MMD

Dear Suesan:

This responds to your request of August 1, 2000 for a list of threatened and endangered marine species that might be found in the waters around American Samoa. Endangered humpback whales (*Megaptera novaeangliae*) may be found offshore of the project site during the winter season. Sperm whales (*Physeter macrocephalus*) are also associated with the waters around American Samoa. Threatened green turtles (*Chelonia mydas*) and endangered hawksbill turtles (*Eretmochelys imbricata*) may occur in the nearshore waters throughout American Samoa.

Species of marine mammals that are not listed as threatened or endangered but are protected under the Marine Mammal Protection Act that may be found in the waters of American Samoa include bottlenose dolphins (*Tursiops truncatus gilli*), spinner dolphins (*Stenella longirostris*), and pilot whales (*Globicephala macrorhynchus*).

Critical habitat has not been designated or proposed for any listed species under the jurisdiction of National Marine Fisheries Service (NMFS) in American Samoa.

Fagatele Bay National Marine Sanctuary is located on the island of Tutuila in American Samoa. For more information regarding the NOAA Sanctuary, I suggest you contact Nancy Daschbach in American Samoa at (684) 633-7354. I also recommend that you contact Alan Everson (808) 973-2937 of our Essential Fish Habitat Division regarding species habitat in American Samoa.

I can be reached at (808) 973-2937 or fax (808) 973-2941 should you have further questions regarding listed species in American Samoa.

Sincerely,

Margaret Dupree  
Protected Species Program

*in Am Samoa*



SEDIMENT STUDY



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

August 31, 1993

*A m. Sfm  
Pago Pago  
AS00000194  
AS0000027*

Steven L. Costa  
Project Manager  
CH2M Hill  
P.O. Box 12681  
Oakland, CA 94604-2681

Re: Approval of Draft Joint Cannery Outfall Sediment Study Plan  
for Second Sampling Period

Dear Steve:

We reviewed the draft study plan for the second period of the sediment monitoring studies required by the canneries' NPDES permits and find that CH2M Hill's response to comments made by our office and American Samoa agencies on the first study plan, adequately addressed our concerns and were incorporated into the first sampling episode where appropriate. The second study plan is hereby approved.

We considered the proposed modification to the monitoring schedule and the advantages to this modified schedule and agree with the changes. Thus the approved schedule for sampling episodes shall be as follows: 2/93, 10/93, 2/95, 2/96 and 2/97.

Please call Pat Young at 415/744-1594 if you have any questions.

Sincerely,

*for M. J. Lee*  
Norman L. Lovelace, Chief  
Office of Pacific Island and Native  
American Programs (E-4)

cc: Jim Cox, Van Camp Seafood Company  
Norman Wei, StarKist Seafood Company  
Tony Tausaga, American Samoa EPA  
Sheila Wiegman, American Samoa EPA

bc: Robyn Stuber, W-5-1 ✓  
Dave Stuart, W-7-1  
Brian Melzian, W-7-1  
Mike Lee, E-4



Key  
Sediment Study  
Copy to Stuart  
Stuart

17 August 1993

PDX30702.SM

Patricia N.N. Young  
American Samoa Program Manager  
Office of Pacific Islands and Native American Programs  
U.S. Environmental Protection Agency  
75 Hawthorne Street (E-4)  
San Francisco, California 94105

Dear Pat:

Subject: Joint Cannery Outfall Sediment Monitoring Study Plan:  
Second Sampling Period

Attached is a draft study plan for second sampling period of the sediment monitoring studies required by the NPDES permits for the Joint Cannery Outfall in Pago Pago Harbor, American Samoa. This study plan is for review by USEPA and ASEPA and is intended to comply with Part G of NPDES Permit Numbers AS0000019 and AS0000027. A response to comments on the first sampling period study plan is attached as an addendum to this plan.

I believe that the only unresolved issue is the schedule for sampling. We believe the best approach is as previously proposed, with the first two sampling episodes closer together. However, EPA comment number 10 indicated that the resulting extended period between the second and third sampling periods might be too long. If this is the case then the canneries will probably elect to keep the schedule as originally required, at annual intervals, rather than adding an additional sampling period. In such a case we would not collect sediments during the tradewind dye study this year and the second sampling period would be next year. Please review our response to EPA comment number 10 and advise me of your decision on the schedule.

Please provide your comments on the study plan directly to me and to Norman Wei at StarKist and Jim Cox at Van Camp. If you or other reviewers have any questions, please feel free to call me at your convenience.



Costa to Young  
17 Aug 93 - Page 2  
PDX30702.SM.R1

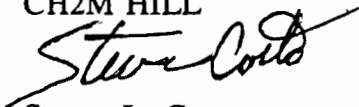
As indicated in the study plan, the second sampling period is tentatively scheduled for the end of September/early October, 1993. Therefore, timely review of the study plan would be greatly appreciated.

Thank you for your time and attention to this matter.

Thank you for your time and attention to this matter.

Sincerely,

CH2M HILL

A handwritten signature in black ink, appearing to read "Steven Costa", written over the printed name.

Steven L. Costa  
Project Manager

cc: Norman Wei/StarKist Seafood Company  
James Cox/Van Camp Seafood Company

**AGENCY REVIEW DRAFT**

**JOINT CANNERY OUTFALL  
SEDIMENT MONITORING STUDY PLAN  
*Second Sampling***

**for**

**StarKist Samoa, Inc.  
and  
VCS Samoa Packing Company**

**to comply with NPDES Permits  
AS0000019  
AS0000027**

**August 17, 1993**

**prepared by  
CH2M HILL**

# JOINT CANNERY OUTFALL SEDIMENT STUDY PLAN Second Sampling

## INTRODUCTION

This Sediment Monitoring Study Plan presents a plan for conducting the second in a series of annual field collections and laboratory analyses of the marine sediments at seven sites in the inner and outer regions of Pago Pago Harbor, American Samoa. This sediment study plan is required under the conditions of the United States Environmental Protection Agency (EPA) NPDES Permit No. AS0000019 for Star-Kist Samoa, Inc. and NPDES Permit No. AS0000027 for VCS Samoa Packing Company. This document describes the objectives, approach, and field and laboratory methods for sediment monitoring in the harbor.

Section G of the Star-Kist Samoa and Samoa Packing NPDES permits addresses the Sediment Monitoring as follows:

*"Sediment monitoring is conducted to determine the character of the sediments in relation to long-term high nutrient discharge by the permittee in the harbor and if harbor recovery will be affected by resuspension of the nutrients.*

*The permittee, cooperatively with {Samoa Packing Co.; Star-Kist Samoa, Inc.} shall undertake a yearly sediment monitoring program in Pago Pago Harbor in order to assess the concentration of nutrient and organic components, the distribution of stored nutrients, the size of the nutrient reservoir, and the rate of accumulation of nutrients. Seven sites shall be located within Pago Pago Harbor and analyzed for total nitrogen, total phosphorus, percent organics, percent solids, bulk density, oxidation-reduction potential, and sulfides. Three sites shall be located in inner Pago Pago Harbor and four sites shall be located in the outer harbor. These sites and monitoring plan shall be submitted within three months of the effective date of the permit for approval by ASEPA and EPA. Thereafter, these sites shall be approved annually by the anniversary date of the effective date of the permit. A report of the sediment monitoring program findings shall be submitted to the ASEPA and EPA 90 days after completion of sampling.*

*After the first two studies have been performed and the results have been assessed, the permit may be reopened for the inclusion of a more frequent or less frequent monitoring schedule."*

This study plan is being submitted to EPA and American Samoa Environmental Protection Agency (ASEPA) to comply with the NPDES permit condition of Section G.

## APPROACH

The joint cannery outfall operated by Star-Kist Samoa and Samoa Packing extends a distance of approximately 1.5 miles from the cannery locations on the north shore of the inner harbor into the outer harbor offshore of Anasosopo Point. The outfall consists of a 16-inch HPDE pipe that terminates with a multiport long diffuser section located at a depth of approximately 176 feet below MLLW. The diffuser section has 4 active ports on alternating sides of the pipe at a spacing of 10 feet. The diffuser ports are all 5-inches in diameter and discharge horizontally. The approved zone of mixing zone boundary is defined according to Figure 1 in the NPDES permits.

This study plan, for the second collection and analysis of sediments, is based on the study plan for the initial sediment monitoring in February 1993 as approved by EPA and USEPA. Some elements of this study plan, for the second sampling, have been revised from the initial study plan based on comments and concerns on the initial study plan and the results of the initial monitoring study. The response to the comments on the first study plan are attached as an addendum to this study plan.

## OBJECTIVES

The objectives of the Sediment Monitoring Study are: (1) to evaluate the characteristics and nutrient load of the marine sediments in the vicinity of the canneries previous (abandoned) outfalls in the inner harbor; (2) to evaluate the characteristics and nutrient load of the marine sediments in the vicinity of the new joint cannery outfall diffuser in the outer harbor; (3) to provide data for an evaluation of changes in harbor sediments over time. Sediments are to be collected from seven sites, three sites proximate to the historic cannery outfalls in the inner harbor, three sites proximate to the new diffuser, and one site at the Utulei outfall discharge site. The relative location of the seven sediment sampling sites are shown in Figure 1.

## SAMPLE SITE LOCATIONS

The location of the sampling sites was established based on the predominant current directions at the outfall areas, bathymetry of the area, limited available information on sediment physical characteristics, and the location of point source discharges of nutrients in consultation with USEPA and ASEPA. The wastewater plume behavior and transport direction will be confirmed through the field dye study measurements. During February 1993 the sampling sites were fixed using MiniRanger coordinates (*Sediment Monitoring Study: February 1993 Data Collections*. Technical Memorandum prepared for StarKist Samoa and VCS Samoa Packing, CH2M HILL, 29 April 1993). The sample sites for the second sampling will be located in the same locations sampled in the first sampling, using a MiniRanger, and are shown in Figure 1. The sites are generally described as follows:

**AGENCY REVIEW DRAFT**  
**17 August 1993**

- Inner harbor site IH-1: located within 100 feet of, and between, the two previous cannery outfalls in the inner harbor
- Inner harbor site IH-2: located within 500 feet directly south of, and between, the two previous cannery outfalls in the inner harbor
- Inner harbor site IH-3: located within 250 feet of the mouth of Pago Pago Stream, at the west end of the inner harbor
- Outer harbor site OH-1: located within 400 feet north-northeast of the new outfall diffuser in the outer harbor;
- Outer harbor site OH-2: located within 400 feet south-southwest of the new outfall diffuser
- Outer harbor site OH-3: located directly across the outer harbor from the new outfall diffuser and about 20 feet of the Utulei WWTP outfall
- Outer harbor site OH-4: located in the center of the outer harbor area mid-way between Tulutulu Point and Tafagamanu Point, and north of Whale Rock.

## **DATA COLLECTION AND ANALYSIS**

Five separate samples will be collected at each sampling site and then composited to provide a single representative composite sample for chemical analyses. The second field collections for the sediment studies will be started in late September 1993, after plan approval by EPA and USEPA. The sediment physical characteristics at each sampling site will be described and photographed in the field.

Chemical analyses will include those listed in the NPDES permit, using analytical and QA/QC procedures provided in the Standard Methods for the Examination of Water and Wastewater (1989) and Procedures for Handling and Chemical Analysis of Sediment and Water Samples (U.S. EPA and Army COE, 1981).

Field and laboratory analytical data will be processed and presented in tabular formats in a sediment monitoring study report, and supporting data will be included in the report appendix.

## MONITORING SCHEDULE

The NPDES permits specify yearly collections of sediment. CH2M HILL and the canneries have proposed to modify this schedule without decreasing the number of monitoring episodes. The modification provides for the first two sampling episodes to be made during the first year of the study 7 to 8 months apart, the third sampling episode to be during the third year, approximately 16 months after the second, and subsequent collections annually thereafter or as determined after review of initial results.

The advantages to this modification include:

- A compressed time interval when sediment characteristics are expected to change most rapidly near the previous discharge locations in the inner harbor. Changes in sediment nutrient concentration near the previous outfalls can be expected to vary in a fashion similar to a first order decay phenomena. The most rapid change will be soon after the source removal (cannery discharge). With time the rate of change will decrease. Therefore, a sampling schedule with more frequent samples at the beginning will better track the time history of changes of nutrient sediment concentrations.
- A compressed time schedule for the initial collections near the new outfall location will provide a better baseline characterization of the sediment characteristics for the same reasons described above.
- The modified schedule will allow CH2M HILL staff doing the dye studies during year one to be directly involved in the sediment monitoring study and provide an opportunity to train personnel that might do similar collections in the future. This will allow consistency, continuity and enhanced comparability of stations, methods, and results.
- The modified schedule will also result in sediment data acquisition for the initial period during both major seasons.

## STUDY METHODS

The sediment monitoring study requires field data and sample collection and subsequent laboratory analysis. The methods to be used for these elements of the study are described below. The field work described in the following sections include the methods and equipment to be used for the field collection of sediments, station positioning, sample handling, and sample shipment. The Laboratory analysis methods listed are compatible with the NPDES permit requirements.

## FIELD EQUIPMENT AND SAMPLING VESSEL

Field equipment requirements for the sediment sampling are listed in Table 1. A work vessel with a two-person scientific staff will be aboard to collect sediment samples by hand, since no vessel with hydraulics is available in American Samoa.

## STATION LOCATIONS AND FIELD POSITIONING

Sediment samples will be collected from a work vessel using five separate grab samples at each of the seven sites. Vessel navigation will be done by using a Motorola Mini-Ranger III electronic positioning system. Use of a Mini-Ranger III will accurate reoccupation of previous sampling stations and will provide range accuracy of approximately  $\pm 2$  meters. A marker buoy will be deployed at the precalculated Mini-Ranger position of the new outfall diffuser prior to collecting sediment samples at the outer harbor outfall sites.

## SEDIMENT SAMPLE COLLECTION

Sediment sampling will be conducted in accordance with the Procedures for Handling and Chemical Analysis of Sediment and Water Samples (U.S. EPA and Army COE, 1981). Sediment samples will be collected using a 0.0225 square meter Petite Ponar grab sampler. The Petite Ponar sampler is a weighted sediment grab sampler designed to penetrate and collect undisturbed samples of sediments ranging from silts to coarse gravels. This type of sampler has been used previously to collect sediment samples throughout Pago Pago Harbor. The grab sampler should be able to penetrate and provide a reliable sediment sample of a minimum depth of 4 cm.

Samples will be collected with a minimum of five separate grabs at each of the seven sites. Sufficient sediment materials will be collected at each site to provide adequate material for the sediment chemistry analyses. More than five grabs will be taken if required to collect sufficient material. If bottom is hard or rocky, has no sediment, or bottom conditions at a site prevent sediment from being recovered, the site will be relocated based on the judgement of experienced scientists on the project staff.

Prior to disturbing the grab samples the following will be recorded in the field logbook: sediment sample penetration depth, color, texture, odor, temperature, pH, and Redox potential. The five (or more) samples from a single site will be composited in a stainless steel bowl, and samples will be taken from the composite for sediment chemistry analyses. The total of seven composite sediment samples for sediment chemistry analysis will be collected.

**AGENCY REVIEW DRAFT**  
**17 August 1993**

Samples collected at each site will be labeled with a unique designator to allow sample tracking; each sample designator will consist of a two-letter location code (IH or OH), followed by a numerical station code (1 through 7). Samples for chemical analyses will be immediately iced and/or preserved (as required) and prepared for shipment to the laboratory. The laboratory selection will be finalized prior to field sample collection

## **LABORATORY ANALYSES**

Each composited sediment sample will be analyzed for the chemicals listed in Table 2. All sample collections, storage and analysis will be performed under the guidance of, and in accordance with: the Procedures for Handling and Chemical Analysis of Sediment and Water Samples (U.S. EPA and Army COE, 1981), Evaluation of Dredged Materials Proposed for Ocean Disposal (EPA/COE, 1991), and Quality Assurance/Quality Control (QA/QC) for 301(h) Monitoring Programs: Guidance on Field and Laboratory Methods (EPA, 1986) . Sample containers, sample handling requirements and sample preservation requirements are listed in Table 3. CH2M HILL previously recommended replacing the bulk density analysis with particle size analysis. This was agreed to by USEPA and ASEPA for the initial study and will be continued.

## **QUALITY ASSURANCE AND QUALITY CONTROL**

The quality assurance and quality control objectives for the sediment studies are to collect representative sediments surface samples and provide laboratory chemical and physical measurements that are of known and acceptable quality. The following requirements will be followed to meet the objectives:

- Provide verifiable laboratory chemical analyses with QA to evaluate accuracy and precision targets
- Maintain and document accurate vessel positioning for sample collection
- Provide field equipment redundancy (backup equipment)
- Develop and use a field operations plan
- Examination of samples as collected and subsequent data by experienced scientists



## **FIELD OPERATIONS PLAN**

A field operations plan for conducting the sediment sample collections was developed for the previous sampling activities. This operations plan will be reviewed and modified as needed and will be the basic element of quality assurance and control activities. The operations plan will include field data sheets, chain of custody forms, and a sample matrix collection checklist.

## **EQUIPMENT CALIBRATION**

All equipment will be obtained prior to the beginning of the sediment studies field collections and checked to verify correct operation. Any instrument requiring calibration will be checked and calibrated upon its arrival to confirm that it is in working condition.

The Mini-Ranger will be calibrated to the manufacturer's specifications prior to conducting the dye study. The unit and transponders will be checked against known distances similar to those to be encountered during the study. A calibration range maintained by the National Ocean Service is used for this purpose.

## **DATA ANALYSIS AND PRESENTATION**

Field data will be summarized and vessel positioning data will be processed to calculate and plot the sediment sampling locations. Laboratory chemical and physical data will be reviewed to determine whether analytical accuracy and precision targets were achieved and to assess the laboratory quality assurance. Sediment chemistry results will be presented in tabular formats.

A report of the results will be provided to EPA and USEPA following each monitoring episode (within 90 days of the field sampling). Any proposed future revisions to the study plan will be presented in the monitoring report or in a revised study plan document. Review comments from EPA and ASEPA will be incorporated into the revised study plan as appropriate. The report will provide summary information of previous sediment monitoring data.

| <p style="text-align: center;"><b>Table 1</b><br/><b>Field Equipment for Sediment Field Collections</b></p> |  |                        |   |
|---|--|------------------------|---|
| <b>Equipment Item</b>   | <b>Purpose</b>   | <b>Number of Units</b> | <b>Accuracy Standard</b>                  |
| Work Vessel   | Field Sampling Platform  | 1                      | N/A                                       |
| 0.02 meter <sup>2</sup><br>Petite Ponar<br>Sediment Grab<br>Sampler   | Collect sediment samples at depth                                  | 1                      | Sediment grab acceptability of 4 cm depth |
| Motorola Mini-Ranger III System   | Microwave positioning System with 3 shore-based transponders       | 1                      | ±2 meters                                 |
| ASTM brass sieves   | Wet sieve sediments from samples                                   | 2                      | N/A                                       |
| Orion Redox Potential and pH Instrument   | Measure sediment oxidation-reduction potential and pH in the field | 1                      | ±0.5 millivolts                           |
| Sample Containers   | Collections of sediments for chemical analyses                     | As required in plan    | Pre-cleaned sample containers             |
| Ice Chests  | Sample jar holder, cool samples on ice, and sample shipment        | As required in plan    | Pre-cleaned containers                    |

| <p style="text-align: center;"><b>Table 2</b><br/><b>Sediment Chemical Analyses</b></p>  |                           |                                     |
|--|---------------------------|-------------------------------------|
| <b>Parameter</b>   | <b>EPA Method<br/>(a)</b> | <b>Other Methods (b,c,d)</b>        |
| Total Kjeldahl Nitrogen (TKN)  | 351.3                     | EPA/COE 1981; TKN in Sediments      |
| Total Phosphorus (TP)  | 365.2                     | EPA/COE 1981; TP in Sediments       |
| Total Sulfides   | 376.1                     | EPA/COE 1981; Sulfides in Sediments |
| Total Volatile Solids (Percent Organics)   | 160.4                     | EPA/COE 1981; TVS in Sediments      |
| Total Organic Carbon   | 415.1                     | SM 5310B                            |
| Percent Solids   | 160.3                     | EPA/COE 1981; Solids in Sediments   |
| Particle Size Analyses (Sieve/Hydrometer)  | None                      | ASTM D422                           |
| <p>(a) EPA methods are defined in 40 CFR 136.3, Guidelines Establishing Test Procedures for the Analysis of Pollutants.</p> <p>(b) U.S. EPA and the Army Corps of Engineers. May 1981. Procedures for Handling and Chemical Analysis of Sediment and Water Samples.</p> <p>(c) American Society for Testing Materials. 1974. Part 19:D422: Standard Method for Particle Size Analysis of Soils.</p> <p>(d) Standard Methods for the Examination of Water and Wastewater, 17th edition. 1989.</p> |                           |                                     |

**Table 3**  
**Sediment Sample Collection and Handling Requirements**

| Parameter                                | Holding Time | Minimum Sample Size | Preservation                    | Sample Container   |
|--|--------------|---------------------|---------------------------------|--------------------|
| Total Kjeldahl Nitrogen                  | 7 days       | 10 g                | Cool, 4°C                       | 250 ml plastic jar |
| Total Phosphorus                         | 7 days       | 10 g                | Cool, 4°C                       | 250 ml plastic jar |
| Sulfides                                 | 4 days       | 20 g                | Cool, 4°C, add 2 ml ZN-ac etate | 250 ml plastic jar |
| Total Volatile Solids (Percent Organics) | 7 days       | 100 g               | Cool, 4°C                       | 250 ml plastic jar |
| Total Organic Carbon                     | 14 days      | 100g                | Cool, 4°C                       | 250 ml plastic jar |
| Percent Solids                           | None         | 50 g                | Cool, 4°C                       | N/A                |
| Particle Size                            | None         | 250 g               | Cool, 4°C                       | 250 ml plastic jar |



## **ADDENDUM**

### **RESPONSE TO COMMENTS ON PREVIOUS STUDY PLAN**

This addendum provides responses to comments by USEPA, ASEPA, and ASDMWR on the *Joint Cannery Outfall Sediment Monitoring Study Plan* for the first sediment sampling period. The comments were received shortly before the actual field work and a formal response to the comments was not prepared prior to conducting the first sampling for the sediment monitoring study. However, CH2M HILL reviewed and incorporated into the first sampling episode, where appropriate, the comments and concerns. Copies of the comments are attached to this addendum.

#### **RESPONSES TO USEPA COMMENTS (See attached letter of 22 Jan 1993)**

Responses to American Samoa Department of Marine and Wildlife Resources comments and concerns are provided separately below. Responses to USEPA comments on the coral reef survey will be provided in a separate document. Responses to USEPA comments on the sediment monitoring plan for the first sediment sampling period are as follows:

**Response to Comment 1.** Analysis for Total Organic Carbon (TOC) was not proposed in the study plan or specifically required in the permits. TOC is a useful parameter, particularly in assessing and interpreting data on organic compounds. Analysis for specific organic compounds in the sediments is not part of the monitoring requirement. Total Volatile Solids (TVS) is considered adequate for the purposes of the study. However, we have modified the study plan to analyze for TOC for the second sampling period.

**Response to Comment 2.** We agree that grain size distribution should be included. Grain size distribution was not required in the permit condition and bulk density was a listed requirement. We do not think there is a need for bulk density, nor is there a feasible or appropriate way to measure it under the study conditions. Therefore, we have substituted grain size distribution for bulk density in the study.

**Response to Comment 3.** CH2M HILL has the documents cited and we routinely reference those documents for studies of this type. They have been added explicitly to the text of the study plan.

**Response to Comment 4.** Sediment traps were considered. The logistical, technical, and interpretational problems of installation, maintenance, and data evaluation for such studies can be formidable. The requirements and objectives of the study do not require the use of sediment traps, at least initially. If the ongoing sediment monitoring study results indicate no measurable impact of the joint cannery discharge then there is no need for more complex studies.

Sediments traps can, but may not, yield data that characterizes deposition of new and/or resuspended material. It is usually difficult, and sometimes impossible, to relate the trapped sediment to quantitative bottom deposition rates. It can also be difficult to determine the source of trapped material. A sediment trap program in Pago Pago Harbor would require long term deployment of traps installed throughout the harbor, and the collection and analysis of ancillary oceanographic and meteorological data at the same time. The data collected would most likely have to be evaluated on a qualitative/relative basis and would not yield quantitative results.

CH2M HILL's assessment is that sediment traps will not add substantial or significant data to the study at this time. If the sediment monitoring program indicates a problem with sediment chemistry changes in the mixing zone, then more comprehensive studies, such as sediment trap studies, may be justified.

We do not believe there is an advantage in using a van Veen sampler over a ponar sampler. Both obtain the same kinds of sample, both are well accepted samplers in the scientific community, and the small ponar is easier to ship and use by hand line from a vessel without hydraulics. If there is some specific reason to change to a van Veen sampler that we are unaware of (e.g. previous sampling programs) we will accommodate such a request. Otherwise, we prefer to continue using the ponar as we have had good success with it in Pago Pago Harbor during previous studies.

**Response to Comment 5.** Total sulfides will be measured using the method(s) described in Table 2 (as revised) of the study plan (EPA 376.1). Ammonia was not listed as a required constituent to be determined in the original permit requirements list of constituents. The samples in the outer harbor are well below the photic zone and direct influence on phytoplankton and macroalgae is unlikely. Measurement of total nitrogen and phosphorous appear sufficient for characterizing cannery discharge impacts, at least initially. We do not plan on adding constituents to the analysis unless a specific problem requiring such analysis is detected in the course of the ongoing studies.

**Response to Comment 6.** We plan to use an Orion Redox Potential probe using the method described in the description enclosed with the USEPA comment letter. The measurements will be done at the 2 cm depth if samples are recovered sufficiently intact. Otherwise measurements will be made within the sediment sample as appears appropriate to the lead scientist in the field. Profiles would require taking core samples. Core samples are not required to meet the objectives of the sediment monitoring study and are not planned. Since we are not collecting the kinds of undisturbed cores required for such measurements, profiles of Eh, pH, or other parameters in the sediment will not be done.

**Response to Comment 7.** See response to comment 6.

**Response to Comment 8.** Sea water rinsing and air drying is all that is required since we are not collecting samples for metals or organics analysis.

**Response to Comment 9.** We are taking grab samples. No cores are being collected. Core samples are not necessary since the concern is changes in the nutrient content of the surficial sediments.

**Response to Comment 10.** The intent of the change in sampling schedule is described in the study plan. As presently planned the first two sampling periods will be about 7 to 8 months apart, the third sampling period about 16 months after the second, and annually thereafter for a total of five sampling periods. The comment indicates that it is desirable to have the third sampling at the same time of year as the first. We agree for the same reason as stated in the comment: this will provide three samples at alternating seasons. However, if the third sampling period is taken 12 months after the second period, the second and third sampling periods will be during the same season. We recommend the sampling schedule proposed by CH2M HILL be used: 2/93, 10/93, 2/95, 2/96, 2/97. As stated in the permit condition the study can be reassessed for more or less frequent sampling after two sampling periods have been completed.

**Response to Comment 11.** We intend to take aliquots for sulfide analysis from each of five separate grabs at each station prior to compositing the samples.

**Response to Comment 12.** Sufficient sample material will be taken so that material will be available to immediately rerun analyses in case of problems (see Table 3). This could be as much as 1.5 liters of material. However, we do not plan on archiving samples after analyses have been successfully completed. Given the relatively straightforward nature of the limited number of tests required, and considering holding time and storage requirements, we see no reason for long term archiving.

**Response to Comment 13.** The reports are planned to be in a Technical Memorandum format (see the first report dated April 1993) with sections as follows: Introduction, Objectives and Approach, Methods, Results, Summary, and Appendices providing chain of custody and laboratory analysis results. These are functionally identical to the organization suggested in the comment. If after review of our initial report USEPA and ASEPA wish to modify the format we will make any necessary changes to the initial and subsequent reports.

**Response to Comment 14.** Table 2 was revised.

#### **RESPONSES TO ASEPA COMMENTS (See attached facsimile transmission of 22 Jan 1993)**

Responses to American Samoa Department of Marine and Wildlife Resources comments and concerns regarding the sediment monitoring plan are provided below. Responses to American Samoa Department of Marine and Wildlife Resources comments on the dye study are presented



in the revised dye study plan. Responses to ASEPA comments on the sediment monitoring plan for the first sediment sampling period are as follows:

**Response to Comments.** The location of IH-3 was changed for the first sampling and will remain so for subsequent sampling. The revised location is shown in Figure 1 and described in the study plan for the second sampling. Site OH-3 is near the Utulei STP outfall location and is intended to provide comparative information for that vicinity to assist in data evaluation and interpretation.

#### **RESPONSES TO ASDMWR COMMENTS (See attached memorandum of 15 Jan 1993)**

**Response to Comments on Origin of Sediments (paragraph 3).** The purpose of the sediment monitoring plan is to monitor the nutrient load in the sediments. A comprehensive sediment budget study, including identification of sediment sources, is not required to address this objective. If the sediment monitoring study indicates problems caused by changes in sediment nutrient load, additional studies of sediment origin, transport, and fate may be appropriate in the future. If no problems are observed, then more complex and sophisticated studies are not required.

**Response to Comments on Age of Sediments (paragraph 5, item 1).** There is no data available to determine the sediment accumulation rates over the past year. The objectives of the monitoring study are to monitor changes in particular aspects of sediment chemistry, and do not include addressing questions of relative age of sediment layers (see the response on origins of sediments above).

**Response to Comments on Residence Time and Flushing of Sediments (paragraph 5, item 2).** Sediments from all sources, natural and anthropogenic, will accumulate in the harbor over time. This is a natural process that occurs in all bays and estuaries. Sediments deposited, from any source, in deep water will generally remain there indefinitely. Some fraction of sediments will be disturbed and carried out of the harbor. For example, wave suspension in shallow water and bioturbation in deeper water can mobilize sediments.

**Response to Comments on Origin of Sediments (paragraph 5, item 3).** Please see the responses to the comments above.

**Response to Comments on Resuspension of Nutrients (paragraph 6).** The objective of the permit requirement is to monitor the impact of the inner harbor sediment nutrient content, which is relatively high, on the water quality of the inner harbor. Specifically, the relocation of the canneries discharge from the inner harbor will result in lower nutrient concentrations in the water column. However, if the nutrients now contained in the inner harbor sediments are released back into the water column the improvement, or recovery, of the inner harbor water

quality may be affected and may not react as predicted in outfall relocation feasibility and design studies. To address this issue we do not need to look at resuspension of sediments (which is unlikely), but rather "resuspension" of the nutrient load in the sediments. This objective is achieved by monitoring the nutrients in the sediments (this sediment monitoring study), monitoring the nutrients in the water column (another permit condition), and reevaluating and verifying the previous model predictions (also a permit requirement).

**Response to Comments on Accumulation of Nutrients (paragraph 7).** The objective is to monitor the accumulation of nutrients in the sediments, not the total sedimentation rates. Although grab samples would not be adequate for determining sedimentation rates, grab samples of sediments are adequate to provide sediment samples for chemical analysis of nutrients. Thus, the accumulation of nutrients in the sediments, particularly in the outer harbor in the vicinity of the new outfall, can be adequately monitored. If an apparent problem is identified, then some of the more sophisticated studies described in the above comments may be required to better define sources, sinks, and transport paths of sediment and nutrients in the sediments. However, the issues addressed by this permit requirement is to monitor conditions to determine if a problem with sediment nutrient content exists.

**Response to Comments on Monitoring Sediment Deposition (paragraph 8).** This comment refers to sediment traps. Essentially the same comment was addressed under USEPA comment number 4 above.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

January 22, 1993

Steven L. Costa  
Project Manager  
CH2M Hill  
1111 Broadway  
P.O. Box 12681  
Oakland, CA 94604-2681

Re: Review of the Joint Cannery Outfall Sediment Monitoring and  
Coral Reef Draft Study Plans

Dear Steve:

We have reviewed the draft sediment monitoring and coral reef study plans submitted to us on January 6, 1993. Both studies are required by the canneries' NPDES permits. Generally both plans are acceptable, and address the objectives of the studies as outlined in the permits. Both studies appear to be well planned. We find that the use of the Mini-Ranger for locating sampling sites is an excellent idea.

However, we have the following comments and recommendations which we would appreciate being commented upon and/or addressed in the final plan:

**Draft Sediment-Monitoring Plan**

1. Total Organic Carbon measurements are preferred over Total Volatile Solids (TVS) because it is a better indicator of sediment organic compounds.
2. Total grain size distribution measurements should not be optional as they are an important assessment of solids dispersal in the harbor (i.e., percent silt, clays, sands, etc.).
3. In addition to references mentioned in the plan, other reference documents should be consulted re: collection, storage, analyses, i.e., EPA's 301(h) QA/QC document (EPA 430/9-86-004) and the EPA/COE 1991 Evaluation of Dredged Materials Proposed for Ocean Disposal (EPA-503/8-91/001). If you do not have these documents, feel free to visit our office to review our copies.
4. Have sediment traps been considered? If not, why not? Sediment traps would enable one to determine deposition of new

material over time. Also, a van Veen sediment grab sampler is preferred over a Ponar sampler.

5. Will total and/or water soluble sulfides be measured? What methods will be used? (See 301(h) QA/QC document). Should ammonia also be measured since it is the form of nitrogen that is most readily utilized by phytoplankton and macroalage?
6. How will Eh be measured? (A copy of a suggested procedure is enclosed as Attachment 1.) At what depth will it be measured? If only one measurement will be taken we suggest it be at the 2 cm depth. However, a full vertical profile through the sediments is preferred.
7. Where will temperature and pH be measured? Will they be measured at the surface, 2 cm depth, and at other depths? Please explain the rationale and objectives for measuring pH, Eh and temperature at depth(s) chosen.
8. How will the sediment grab sampler and stainless steel bowls be cleaned between sampling events to minimize cross-contamination between stations?
9. Will only the surface sediments be photographed? If yes, why? We suggest that photographs also be taken of sediment cores as changes in color could then be correlated with other data re: Eh, particle size, hydrogen sulfide, etc.
10. We have no objection to the modification of the monitoring schedule proposed, i.e., having the first two sampling episodes during the first year of the study, six months apart. However, we recommend that the third sampling event occur 12 months after the second episode, versus 18 months as proposed in the study. We feel that the 18-month interval is too long after the second sampling event. Also, a 12-month interval would enable the sampling to take place during the same time as the first event. This should provide information to assist in determining the best season for the annual sampling in the future.
11. Compositing the sediment samples may greatly affect the hydrogen sulfide measurements. Perhaps separate discrete samples should be collected for hydrogen sulfide measurements before compositing.
12. We suggest that a minimum of 2 liters of sediment per station be collected and that excess sediment samples be archived in case there are problems with any of the measurements.
13. The final report on the study results submitted to USEPA and ASEPA should include the following: Introduction, Methods and

Materials, Results, Discussion and Recommendations, and Conclusions.

14. Table 2 on Sediment Chemical Analyses indicates standard methods numbers which are outdated. See 1989 edition of Standard Methods.

#### Draft Coral Reef Study Plan

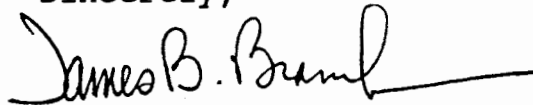
The draft plan for the coral reef study is generally good. We especially find noteworthy the use of a Mini-Ranger for siting, use of permanent transects and the adequate number of stations to be surveyed, and the various depths at each station. Our review comments are as follows:

1. Benthic organisms included in the semi-quantitative data sets at each transect should be macroinvertebrates and macroalgae.
2. If possible, water quality sampling should be coordinated with the reef surveys so that any potential correlations between water quality and biological data can be noted. Water quality monitoring should be performed either on the same day or within a week of the coral reef surveys.
3. On page 5, end of the third paragraph, only five representative sites are specified where video records of reef flats will be taken. Where is the sixth representative site?
4. Will the marine ecologist who will be analyzing the videos also be involved in conducting the transects? Please provide a copy of his resume/experience in tropical marine waters.
5. Please describe in detail how the video transect records will be "analyzed and summarized" (see page 2 of the draft plan).
6. We recommend that all sites be visited at least once per year to ensure that the transect marker stakes are still present and/or whether any major changes to each site have occurred.
7. Please describe in detail the video equipment and methods to be used during the videotaping of each transect. This would include information describing:
  - a. The camera(s) to be used and "line of resolution" per frame;
  - b. Recommended swimming speed for each transect;
  - c. Standardized distance from the bottom that will be used during videotaping and the taking of still pictures; and,

- d. Any other relevant information.
8. In order to quantitatively document changes within and between the silts over time, we strongly recommend that at least one permanent square-meter quadrant be established along each transect line.
  9. For additional guidance in modifying the design of the coral survey plans, please refer to the attached documents entitled: Effects of Sugar Mill Waste Discharge on Reef Coral Community Structure, Hamakua Coast, Island of Hawaii (Attachment 2) and Proposal for Long-Term Monitoring and Management Research on Coral Reefs (Attachment 3).
  10. It might be worthwhile to investigate whether a chemical indicator exists in the cannery effluent (e.g., aluminum from the alum added to the wastewater treatment system) which can be measured in the sediment. This would assist in determining transport, dispersion, etc. of the effluent in the harbor.
  11. The final report on the study results submitted to USEPA and ASEPA should include the following: Introduction, Methods and Materials, Results, Discussion and Recommendations, and Conclusions.

Also attached are the American Samoa Department of Marine and Wildlife Resources' (DMWR) comments on the sediment monitoring plan and the dye study plan (Attachment 4). We would appreciate your response (in writing) regarding our concerns raised above, and the comments provided by DMWR regarding the draft sediment monitoring plan and the dye study plan. Please call Pat Young at 415/744-1591 if you have any questions.

Sincerely,



for Norman L. Lovelace, Chief  
Office of Pacific Island and Native  
American Programs (E-4)

Enclosures (4)

cc: Sheila Wiegman, American Samoa EPA

OFFICE OF THE GOVERNOR  
ENVIRONMENTAL PROTECTION AGENCY

January 22, 1993

To: Steve Costa, CH2M Hill

From: Sheila Wiegman, American Samoa EPA

Re: Comments on Sediment and Outfall Dye Studies for American Samoa Canneries.

We have reviewed the draft study plans for the above referenced studies and have the following comments. The AS Department of Marine and Wildlife Resources submitted the attached comments to me.

My only comment on the sediment study is concerning the location of the stations. The inner harbor should probably be sampled near Pago Park. Sites IH-3 or site IH-2 could be moved. Also, site OH-3 is near the Utulei STP outfall and would probably reflect that discharge rather than the cannery discharge.

Please feel free to contact me if you have any questions on these comments.

January 15, 1993

**FROM:** John McConnaughey  
Fisheries Biologist

**TO:** Sheila Wiegman, ASEPA  
Norman Wei, Starkist Samoa Inc  
Jim Cox, VCS Samoa Packing Company

**SUBJECT:** Comments on "Joint Cannery Outfall Sediment Monitoring Study Plan.

A copy of the Joint Cannery Outfall Sediment Monitoring Study Plan dated January 6, 1992 has been forwarded to our department for review and comments. This study is written to comply with NPDES permits AS0000019 and AS0000027, which allow for the construction and use of the cannery outfall.

In reviewing the study plan I have some questions regarding the usefulness of the studies potential results as far as evaluating the effects of the wastes discharged from the cannery outfall.

My main problem with the sediment sampling program as described is that no mention is made in the methodology as to what criteria will be used to determine the origin of sediments recovered from the harbor.

We know that large volumes of organic wastes were discharged at the cannery sites prior to the construction of the 1.5 mile long discharge pipe. We also know that this pipe is now discharging wastes at a site that is now deeper and further removed from the inner harbor. And we know that there are numerous other sources of wastes and sediments entering the harbor on all sides.

My questions are these:

- 1) Of the top layer of sediments, how much is new material v.s. old material?



- 2) What is the resident time of sediments in the harbor? Do they eventually flush out, or do sediments just continue to accumulate?
- 3) For sediments which have been deposited in the last year, what proportion of them are 1) from wastes discharged from the canneries, 2) from other sources, or 3) sediments which have been resuspended and now just redeposited in their present location?

Section G of the Star-Kist Samoa and Samoa Packing NPDES permit states:

"Sediment monitoring is conducted"..."and if harbor recovery will be affected by resuspension of the nutrients."

From the study plan, I do not see how the resuspension issue will be addressed. It seems to me that in order to investigate the resuspension issue, that one needs to know what proportion of the observed sediments are new v.s. older resuspended sediments.

Section G also states:

"The permittee"..."shall undertake a yearly sediment monitoring program in Pago Pago Harbor in order to assess"..."the rate of accumulation of nutrients".

I question whether using grab samples as outlined in the study proposal will address the issue of sediment accumulation rates.

I have only very limited experience working on marine sediment studies, but it seems to me that an alternative procedure which would monitor the sedimentation on a bare surface would provide more useful information on the nature and deposition rates of sediments being currently deposited.

cc: Ray Tulafono, Director DMWR  
Peter Craig, Chief Biologist DMWR

SEDIMENT STUDY  
Recd 5/3/93  
Copy to Oda  
Stuart/Melvin



29 April 1993

PDX30702.SM

Patricia N.N. Young  
American Samoa Program Manager  
Office of Pacific Islands and Native American Programs  
U.S. Environmental Protection Agency  
75 Hawthorne Street (E-4)  
San Francisco, California 94105

Dear Pat:

Subject: Joint Cannery Outfall Sediment Monitoring Study

Enclosed are two copies of a Technical Memorandum describing the results of the Sediment Monitoring Study done under StarKist Samoa and VCS Samoa Packing NPDES permit requirements. We will be forwarding our study plan for the second sampling event for your review by the end of May 1993. We foresee no significant modifications.

If have any questions please feel free to call me at your convenience.

Sincerely,

CH2M HILL

A handwritten signature in black ink, appearing to read "Steven L. Costa", is written over the printed name.

Steven L. Costa  
Project Manager

cc: Norman Wei/StarKist Seafood Company  
James Cox/Van Camp Seafood Company  
Maurice Callaghan, StarKist Samoa, Inc.  
Michael Macready, VCS Samoa Packing Co.

**PREPARED FOR:** StarKist Samoa, Inc  
VCS Samoa Packing Company

**PREPARED BY:** David Wilson/CH2M HILL/SEA  
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**DATE:** 29 April 1993

**SUBJECT:** Sediment Monitoring Study  
February 1993 Data Collection

**PROJECT:** PDX30702.SM.R1

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### *Introduction*

This memorandum presents the field collection and laboratory analysis of marine sediments collected in the inner and outer regions of Pago Pago Harbor. This is the first sediment monitoring episode and provides a baseline for comparison with future measurements. This work has been conducted to comply with Section G of the StarKist Samoa and Samoa Packing NPDES permits, which state the following:

"Sediment monitoring is conducted to determine the character of the sediments in relation to long-term high nutrient discharge by the permittee in the harbor and if harbor recovery will be affected by resuspension of the nutrients.

The permittee, cooperatively with (Samoa Packing Co.; StarKist, Inc) shall undertake a yearly sediment monitoring program in Pago Pago Harbor in order to assess the concentration of nutrient and organic components, the distribution of stored nutrients, the size of the nutrient reservoir, and the rate of accumulation of nutrients. Seven sites shall be located within Pago Pago Harbor and analyzed for total nitrogen, total phosphorus, percent organics, percent solids, bulk density, oxidation-reduction potential, and sulfides. Three sites shall be located in inner Pago Pago Harbor and four sites shall be located in the outer harbor. These sites and monitoring plan shall be submitted within three months of the effective date of the permit for approval by ASEPA and EPA. Thereafter, these sites shall be approved annually by the anniversary date of the effective date of the permit. A report of the sediment monitoring program findings shall be submitted to the ASEPA and EPA 90 days after completion of sampling.

After the first two studies have been performed and the results have been assessed, the permit may be reopened for the inclusion of a more frequent or less frequent monitoring schedule."

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A Sediment Monitoring Study Plan was submitted for review and approval to the EPA and ASEPA on January 6, 1993. During the development and review of the Sediment Monitoring Study Plan, specific changes or clarification of the sediment analyses were agreed to with the EPA and ASEPA. Particle size analysis replaced bulk density, and the percent organics in sediments is to be provided by total volatile solids analysis. In addition, the location of one sediment sampling site (IH-3) was changed, at the request of ASEPA, and the revised location was near the mouth of Pago Pago Stream. The changes have all been incorporated into the final study plan for the initial sediment sampling and analysis.

***Objectives and Approach***

The objectives of the Sediment Monitoring are: (1) to evaluate the characteristics and nutrient load of the marine sediments in the vicinity of the canneries historic (abandoned) outfalls in the inner harbor; (2) to evaluate the characteristics and nutrient load of the marine sediments in the vicinity of the new joint cannery outfall diffuser into the outer harbor; and (3) to provide data for an evaluation of changes in harbor sediments over time. The sediment data presented in this document are the first data set for the Sediment Monitoring Study, and subsequent sample collections and analyses will provide data for the assessment of changes over time, as well as changes between sites within Pago Pago Harbor.

Sampling sites were located based on the predominant current directions at the outfall areas, bathymetry of the area, limited information on sediment physical characteristics, and the location of other point sources. Sediment samples were collected at the following seven sites (Figure 1) in February 1993, in accordance with the approved study plan:

- Inner harbor site IH-1: located within 100 feet of, and between, the two previous cannery outfalls in the inner harbor
- Inner harbor site IH-2: located within 500 feet directly south of, and between, the two previous cannery outfalls in the inner harbor
- Inner harbor site IH-3: located within 250 feet of the mouth of Pago Pago Stream, at the west end of the inner harbor
- Outer harbor site OH-1: located within 400 feet north-northeast of the new outfall diffuser in the outer harbor;

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- Outer harbor site OH-2: located within 400 feet south-southwest of the new outfall diffuser
- Outer harbor site OH-3: located directly across the outer harbor from the new outfall diffuser and about 20 feet of the Utulei WWTP outfall
- Outer harbor site OH-4: located in the center of the outer harbor area mid-way between Tulutulu Point and Tafagamanu Point, and north of Whale Rock.

The sampling sites were located using a MiniRanger. This provides a high degree of repeatability for stationing for future sampling episodes. The MiniRanger coordinates for each Station are given in Table 1.

### ***Methods***

Sediment sampling was conducted in accordance with the approved Sediment Monitoring Study Plan, and consistent with the Procedures for Handling and Chemical Analysis of Sediment and Water Samples (U.S. EPA and Army COE, 1981).

Sediment samples were collected using a 0.0225 meter<sup>2</sup> petite Ponar grab sampler. The Ponar sampler is a weighted sediment grab sampler designed to penetrate and collect undisturbed samples of sediments ranging from silts to coarse gravels. Samples were collected in five separate grabs at each of the seven sites, except at OH-3. At OH-3, three grab samples were collected by a diver from the seabed within 20 feet of the Utulei outfall discharge port. Sufficient sediment materials were collected for the sediment chemistry tests and to provide archive materials.

Prior to disturbing the sample, the following were recorded in the field logbook; date, time, water depth, sediment sample penetration depth, color, texture/type, odor, depth of visible oxidation-reduction layer, and photograph and film roll number. Photographs were taken of each sediment sample. The Orion Redox Potential and pH meter was damaged during shipment, and oxidation-reduction potential measurements could not be taken. However, visual observations of the depth to anoxic sediments were made which partially compensate for the lack of direct measurements.

The surface 2 cm depth layer of each grab sample was composited into a stainless steel bowl and small (<1-oz.) sample portion of each grab was place directly into a 4-ounce jar for the sulfide analysis. The composite sample was stirred, and an 8-ounce and 16-ounce container were filled from the composite sediment sample using a pre-cleaned

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stainless steel spoon. The surface sediments collected by hand by a diver at OH-3 were composited for all tests. Samples collected at each site were labeled with a unique label. All sediment sample containers were sealed into ziplock bags and stored on ice in an ice chest for transport to the laboratory. A total of seven composite sediment samples were submitted for chemical and physical analyses.

Sediment sampling was completed at IH-1, IH-2, IH-3, OH-3, and OH-4 on February 13, 1993. Sediment samples were collected at OH-1 and OH-2 on February 18, 1993, after the outfall diffuser in the outer harbor was located and marked with a buoy. All sediment samples were stored on ice until delivered to the laboratory. Sample chain of custody forms were completed and then sealed into zip-lock bags and taped inside the lid of the ice chest. Samples were shipped as checked luggage on flights from Pago to Honolulu and then to Seattle. Samples were delivered to North Creek Analytical Laboratory before 1200 on February 23rd.

Sediment samples were analyzed for the chemical and physical parameters listed in Table 2. The sample containers, sample handling requirements and sample preservation requirements were in accordance with those listed in Table 2, with the exception that sulfide samples exceeded the recommended holding time. This holding time exceedance is not considered significant, since the sulfide samples were preserved with zinc acetate and held on ice. The sediment sampling and shipping dates were extended in the field, because of unavoidable delays in obtaining field equipment in American Samoa.

## ***Results***

Complete laboratory data sets, laboratory quality control data reports, and chain-of-custody forms are attached to this memorandum. The chain-of-custody form is included in Attachment 1 and analytical data sheets and quality control data reports are included as Attachment 2. The physical characteristics and descriptions of the marine sediments collected in Pago Pago Harbor are provided in Table 3, and the results of the chemical analyses are provided in Table 4.

**Physical Analysis.** The physical characteristics of the sediments near the old cannery outfalls (IH-1) are very similar to those near the mouth of Pago Pago Stream (IH-3) in the inner harbor (Table 3). Sediments at both IH-1 and IH-3 consisted of grey-black sandy-silts with visible oil sheen, a strong sulfurous odor, and essentially no surface oxidized sediment layer. Both of these inner harbor sites had sediments with low densities (26 and 30 percent solids), indicating organic material depositions at these sites. Sediments collected from 500 feet south of the old cannery outfalls (IH-2)

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consisted primarily of silts with a thin (1-2 cm) oxidized surface layer, a slight sulfurous odor, and 45 percent solids content.

Sediments collected from the outer harbor all consisted of oxidized sediments with varying mixes of silts and sands. These outer harbor sediments also had a much greater density (e.g. 58 to 69 percent solids). Sediment sampling sites OH-1 and -2 were located near the new canneries outfall and proximate to the coral reef slope on the east side of harbor. OH-3 was located near the Utulei sewage outfall and within 200 feet of the coral reef on the west side of the harbor. OH-4 was located in the middle of the outer harbor. Sediments collected near the joint cannery outfall (at OH-1 and -2) were predominantly tan silts with less than 20 percent sands and they were oxidized throughout the entire sample depth (6 cm). Sediments from the middle of the outer harbor (OH-4) were 56% coral sands and medium sands and 43% silts, and they were oxidized throughout the entire sample depth (6 cm). Sediments collected at the Utulei outfall (OH-3) were much coarser than the middle and eastern regions of the outer harbor, with 90% coral sands and less than 10 percent silts.

**Chemical Analysis.** Sediment chemical analyses results for the inner and outer harbor sites are summarized in Table 4. The sediment physical data indicates substantial differences between the inner and outer harbor areas, and these difference correlate with the sediment organic content. Sediment organics, as measured by total volatile solids, ranged from 9.3 to 19 percent in the inner harbor sites compared with 3.1 to 5.6 percent in the outer harbor sites. Sediments collected at IH-1 and IH-3 show substantially elevated values of total volatile solids (TVS), total Kjeldahl nitrogen (TKN), total phosphorus (TP), and total sulfide compared to other sites. In comparison, IH-2, located only 500 feet from the previous cannery outfalls and near the center of the inner harbor basin, had TVS, TKN, and total sulfide concentrations that were 50 percent less than at IH-1 and 30 percent less than at IH-3. An oxidized surface sediment layer was also observed at IH-2, indicating that the anoxic sediments may be localized near stream mouths and previous outfalls.

The outer harbor sediments show very little difference in organic contents between the four sites (Table 4), despite the differences in sediment physical characteristics (Table 3). The sediments at OH-1 and -2, located near the new outfall diffuser, consisted primarily of silts and these sites had total volatile solids values of 5.6 and 4.9 percent, respectively. By comparison, the sediments at OH-3 and -4 consisted mainly of sands and these sites had TVS values of 3.1 and 4.2 percent, respectively. TKN and TP values were equivalent at all sites in the outer harbor. Total sulfides concentrations were slightly above the reporting limit for samples from the two near outfall sites, and were not detected at the other two sites. Sediments from these four outer harbor

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sampling sites were observed to be completely oxidized throughout the sample depth, with no oxidation-reduction layer.

***Summary***

The sediments near the old cannery outfalls (IH-1) have similar physical and chemical characteristics to those near the mouth of Pago Pago Stream (IH-3) in the inner harbor. Sediments at IH-1 and IH-3 consist of anoxic, grey-black sandy-silts with oil sheen, a strong sulfurous odor, and elevated levels of volatile organics, nitrogen compounds, phosphorus compounds, and sulfides. Both of these inner harbor sites have sediments that appear to consist of deposited organic materials. The sources of the organic deposits and contaminants at both sites include all activities in the inner harbor and its watershed. Sediments from IH-2, only 500 feet south of the old cannery outfalls were grey-brown silts with an oxidized surface layer. IH-2 samples had 30- to 50-percent lower volatile organics, nitrogen compounds, and sulfides, and 10- to 25-percent lower phosphorus compounds, than the sediment samples at IH-1 and IH-3. The transition into oxidized sediments at IH-2, indicates that the organic sediments appear to occur in a localized area.

Although the outer harbor sediments range from predominantly silts near the new outfall (OH-1 and -2) to mainly sands at the middle and west side sampling sites (OH-3 and -4) in the outer harbor, the data show very little difference in organic contents between the four sites. Sediments from these four outer harbor sampling sites were completely oxidized throughout the sample, and sediment nitrogen and phosphorus levels were equivalent at all sites in the outer harbor.



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| <b>Table 1</b><br><b>Sampling Locations for Sediments in Pago Pago Harbor</b>  |  |  |          |
|--|--|--|----------|
| Station  | Sampling Location and Depth (feet)   | Navigation Coordinates for MiniRanger III System (a,b) |          |
|  |  | Code 1   | Code 4   |
| IH-1   | Between old cannery outfalls in inner harbor<br>(60 feet)                      | 1420 (N)   | 581 (N)  |
| IH-2   | 500 feet South of and between old cannery outfalls in inner harbor<br>(100 ft) | 1459 (N)   | 731 (N)  |
| IH-3   | 250 feet off mouth of Pago Pago Stream in inner harbor<br>(25 ft)              | 2992 (N)   | 1679 (N) |
| OH-1   | 400 feet NNE of cannery outfall in outer harbor<br>(160 ft)                    | 1264 (S)   | 1504 (S) |
| OH-2   | 400 feet SSW of cannery outfall in outer harbor<br>(180 ft)                    | 1561 (S)   | 1725 (S) |
| OH-3   | Within 20 feet of the Utulei outfall discharge<br>(120 ft)                     | 1596 (S)   | 1265 (S) |
| OH-4   | Outer harbor between Tulutulu and Tafagamanu Pts<br>(180 ft)                   | 2048 (S)   | 1768 (S) |
| <b>NOTES:</b> <p>(a) The shore-based Mini-Ranger transponders were located at survey control points as follows: Code 1 - located at Pago Pago Harbor Front Range Tower (261,551.58E and 309,857.04N, State Coordinates (feet)); Code 4 - located at Fagatogo Tram Park Building (258,117.06E and 305,879.24N, State Coordinates (feet)).</p> <p>(b) The navigation readings are designated as either north (N) or south (S) of the alignment between the Code 1 and Code 4 shore transponder stations.</p> <p>(c) Coordinates were acquired at the time of sampling at Stations OH-1 and OH-2. At other stations coordinates were determined by revisiting the sites two days later. This procedure was followed because of delays in receiving equipment.</p> |  |  |          |

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**Table 2**  
**Sediment Sample Analyses and Handling Procedures**

| <b>Parameter</b>        | <b>Analytical Methods (a,b,c)</b> | <b>Reporting Detection Limits</b> | <b>Sample Holding Time</b> | <b>Sample Container</b> | <b>Sample Preservation</b>     |
|-------------------------|-----------------------------------|-----------------------------------|----------------------------|-------------------------|--------------------------------|
| Total Kjeldahl Nitrogen | EPA 351.3                         | 1 mg/kg                           | 14 days                    | 8-oz. glass             | 4 deg. C                       |
| Total Phosphorus        | EPA 6010                          | 10 mg/kg                          | 14 days                    | 8-oz. glass             | 4 deg. C                       |
| Total Sulfides          | EPA/COE 1981                      | 0.12 mg/kg                        | 7 days                     | 4-oz. glass             | 4 deg. C, add 2 ml. Zn-acetate |
| Total Volatile Solids   | EPA 160.4                         | 0.5%                              | 14 days                    | 8-oz. glass             | 4 deg. C                       |
| Percent Solids          | EPA/COE 1981; SM2540/B            | N/A                               | 14 days                    | 8-oz. glass             | None                           |
| Particle Size Analysis  | ASTM D422                         | N/A                               | 6 months                   | 8-oz. glass             | None                           |

(a) EPA methods are defined in 40 CFR 136.3, Guidelines Establishing Test Procedures for the Analysis of Pollutants.  
(b) U.S. EPA and Army Corps of Engineers. May 1981. Procedures for Handling and Chemical Analysis of Sediment and Water Samples.  
(c) American Society for Testing Materials. 1974. Part 19:D422; Standard Method for Particle Size Analysis of Soils.

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| <div>Table 3</div> <div>Physical Characteristics of Pago Pago Harbor Sediments</div> |   |   |                  |                                      |      |      |                |
|--|---|---|------------------|--------------------------------------|------|------|----------------|
| Station  | Location and Depth (feet)   | Sediment Type   | Redox Depth (cm) | Particle Size Distribution (Percent) |      |      | Percent Solids |
|  |   |   |                  | Sand                                 | Silt | Clay |                |
| INNER HARBOR STATIONS  |   |   |                  |                                      |      |      |                |
| IH-1   | Between old cannery outfalls in inner harbor (60 feet)                      | Grey-black sandy silts with visible oil sheen and strong sulfurous odor | <0.5             | 30                                   | 70   | 0    | 26             |
| IH-2   | 500 feet South of and between old cannery outfalls in inner harbor (100 ft) | Grey-brown silts with clay, and with slight odor                        | 1-2              | 8                                    | 86   | 6    | 45             |
| IH-3   | 250 feet off mouth of Pago Pago Stream in inner harbor (25 ft)              | Grey-black sandy silts with visible oil sheen and strong sulfurous odor | <0.5             | 33                                   | 67   | 0    | 30             |
| OUTER HARBOR STATIONS  |   |   |                  |                                      |      |      |                |
| OH-1   | 400 feet NNE of cannery outfall in outer harbor (160 ft)                    | Tan, sandy silts with clay and no odor                                  | None             | 11                                   | 83   | 6    | 60             |
| OH-2   | 400 feet SSW of cannery outfall in outer harbor (180 ft)                    | Tan, sandy silts with some clay and no odor                             | None             | 19                                   | 79   | 2    | 59             |
| OH-3   | Within 20 feet of the Utulei outfall discharge (120 ft)                     | Grey-white coral sands and dark gray medium sands, with no odor         | None             | 90                                   | 9    | 1    | 58             |
| OH-4   | Outer harbor between Tulutulu Pt and Tafagamanu Pt (180 ft)                 | Tan, mixed coral and medium sands and silts, with no odor               | None             | 56                                   | 43   | 1    | 69             |

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| <b>Table 4</b><br><b>Results of Pago Pago Harbor Sediment Chemical Analyses</b> |   |                   |  |   |                                     |                                  |
|---|---|-------------------|--|---|-------------------------------------|----------------------------------|
| Site  | Sampling Location<br>(Depth in feet)                                      | Percent<br>Solids | Total<br>Volatile<br>Solids<br>(percent) | Total<br>Kjeldahl<br>Nitrogen<br>(mg/kg, dry) | Total<br>Phosphorus<br>(mg/kg, dry) | Total<br>Sulfide<br>(mg/kg, dry) |
| <b>INNER HARBOR STATIONS</b>  |   |                   |  |   |                                     |                                  |
| IH-1  | Between old cannery<br>outfalls in inner harbor<br>(60 feet)              | 26                | 19                                       | 1,700   | 1,200                               | 41                               |
| IH-2  | 500 ft S & between old<br>cannery outfalls in inner<br>harbor<br>(100 ft) | 45                | 9.3                                      | 770   | 1,100                               | 22                               |
| IH-3  | 250 feet off mouth of<br>Pago Pago Stream in<br>inner harbor<br>(25 ft)   | 30                | 14                                       | 1,100   | 1,500                               | 34                               |
| <b>OUTER HARBOR STATIONS</b>  |   |                   |  |   |                                     |                                  |
| OH-1  | 400 feet NNE of<br>cannery outfall in outer<br>harbor<br>(160 ft)         | 60                | 5.6                                      | 480   | 600                                 | 0.8                              |
| OH-2  | 400 feet SSW of<br>cannery outfall in outer<br>harbor<br>(180 ft)         | 59                | 4.9                                      | 470   | 570                                 | 0.5                              |
| OH-3  | Within 20 feet of the<br>Utulei outfall discharge<br>(120 ft)             | 58                | 3.1                                      | 410   | 530                                 | <0.1                             |
| OH-4  | Mid-outer harbor<br>between Tulutulu Pt<br>and Tafagamanu Pt<br>(180 ft)  | 69                | 4.2                                      | 470   | 470                                 | <0.1                             |



APPENDIX I

CHAIN OF CUSTODY FORMS

Marine Sediment Samples from Pago Pago Harbor, American Samoa  
February 1993

STARKIST SAMOA, Inc. and VCS SAMOA PACKING COMPANY



1. TC



QUALITY ANALYTICAL LABORATORIES

CHAIN OF CUSTODY RECORD AND AGREEMENT TO PERFORM SERVICES

|                               |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|--|--|--|------------------------------|--|--|--|--|--|--|--|--|--|---------------------------------|--|--|--|--|--|--|--|--|--|---------------------------------|--|--|--|--|--|--|--|--|--|------------------------------|--|--|--|--|--|--|--|--|--|------------------|--|--|--|--|--|--|--|--|--|------------------------------|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|
| CH2M HILL Project #           |  |  |  |  |  |  |  |  |  | Purchase Order #             |  |  |  |  |  |  |  |  |  | LAB TEST CODES                  |  |  |  |  |  |  |  |  |  | SHADED AREA -- FOR LAB USE ONLY |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Project Name                  |  |  |  |  |  |  |  |  |  | # OF CONTAINERS              |  |  |  |  |  |  |  |  |  | Lab 1 #                         |  |  |  |  |  |  |  |  |  | Lab 2 #                         |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Company Name/CH2M HILL Office |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  | Quote #                         |  |  |  |  |  |  |  |  |  | Kit Request #                   |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Project Manager & Phone #     |  |  |  |  |  |  |  |  |  | Report Copy to:              |  |  |  |  |  |  |  |  |  | ANALYSES REQUESTED              |  |  |  |  |  |  |  |  |  | Project #                       |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Requested Completion Date:    |  |  |  |  |  |  |  |  |  | Sampling Requirements        |  |  |  |  |  |  |  |  |  | Sample Disposal:                |  |  |  |  |  |  |  |  |  | No. of Samples                  |  |  |  |  |  |  |  |  |  | Page                         |  |  |  |  |  |  |  |  |  | of               |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|                               |  |  |  |  |  |  |  |  |  | SDWA NPDES RCRA OTHER        |  |  |  |  |  |  |  |  |  | Dispose Return                  |  |  |  |  |  |  |  |  |  | COC Rev                         |  |  |  |  |  |  |  |  |  | Login                        |  |  |  |  |  |  |  |  |  | LIMS Ver         |  |  |  |  |  |  |  |  |  | Ack Gen                      |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Type                          |  |  |  |  |  |  |  |  |  | Matrix                       |  |  |  |  |  |  |  |  |  | CLIENT SAMPLE ID (9 CHARACTERS) |  |  |  |  |  |  |  |  |  | REMARKS                         |  |  |  |  |  |  |  |  |  | LAB 1 ID                     |  |  |  |  |  |  |  |  |  | LAB 2 ID         |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Date                          |  |  |  |  |  |  |  |  |  | Time                         |  |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| 2/13                          |  |  |  |  |  |  |  |  |  | 11:45                        |  |  |  |  |  |  |  |  |  | X X X X X I H - 3               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 8oz Glass        |  |  |  |  |  |  |  |  |  | 3020769                      |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | X X X X X I H - 3               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 4oz Glass w ZnAc |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | X X X X X I H - 3               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 16oz Poly        |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| 2/13                          |  |  |  |  |  |  |  |  |  | 12:20                        |  |  |  |  |  |  |  |  |  | X X X X X I H - 1               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 8oz Glass        |  |  |  |  |  |  |  |  |  | 3020770                      |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | X X X X X I H - 1               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 4oz Glass w ZnAc |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | X X X X X I H - 1               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 16oz Poly        |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| 2/13                          |  |  |  |  |  |  |  |  |  | 13:20                        |  |  |  |  |  |  |  |  |  | X X X X X I H - 2               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 8oz Glass        |  |  |  |  |  |  |  |  |  | 3020771                      |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | X X X X X I H - 2               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 4oz Glass w ZnAc |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | X X X X X I H - 2               |  |  |  |  |  |  |  |  |  | 1                               |  |  |  |  |  |  |  |  |  | X X X X X                    |  |  |  |  |  |  |  |  |  | 16oz Poly        |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Sampled By & Title            |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time                       |  |  |  |  |  |  |  |  |  | Relinquished By                 |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time        |  |  |  |  |  |  |  |  |  | HAZWRAP/NESSA: Y N           |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | 2/13/13 15:40                   |  |  |  |  |  |  |  |  |  | ↓                               |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | 2/13/13          |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Received By                   |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time                       |  |  |  |  |  |  |  |  |  | Relinquished By                 |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time        |  |  |  |  |  |  |  |  |  | QC Level: 1 2 3 Other: _____ |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | 2/23/13 10:00                   |  |  |  |  |  |  |  |  |  | ↓                               |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | 2/23/13          |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Received By                   |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time                       |  |  |  |  |  |  |  |  |  | Relinquished By                 |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time        |  |  |  |  |  |  |  |  |  | COC Rec                      |  |  |  |  |  |  |  |  |  | ICE |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | 2/23/13 11:15                   |  |  |  |  |  |  |  |  |  | ↓                               |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | 2/23/13          |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Received By                   |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time                       |  |  |  |  |  |  |  |  |  | Shipped Via                     |  |  |  |  |  |  |  |  |  | Shipping #                   |  |  |  |  |  |  |  |  |  | Ana Req          |  |  |  |  |  |  |  |  |  | TEMP                         |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| ↓                             |  |  |  |  |  |  |  |  |  | ↓                            |  |  |  |  |  |  |  |  |  | ↓                               |  |  |  |  |  |  |  |  |  | UPS BUS Fed-Ex Hand Other       |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  | Cust Seal                    |  |  |  |  |  |  |  |  |  | Ph  |  |  |  |  |  |  |  |  |  |
| Work Authorized By            |  |  |  |  |  |  |  |  |  | (Please sign and print name) |  |  |  |  |  |  |  |  |  | Date/Time                       |  |  |  |  |  |  |  |  |  | Remarks                         |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |

Instructions and Agreement Provisions on Reverse Side

| CH2M HILL Project #        |   | Purchase Order #              |   | LAB TEST CODES            |   | SHADED AREA - FOR LAB USE ONLY |   |                |               |
|----------------------------|---|-------------------------------|---|---------------------------|---|--------------------------------|---|----------------|---------------|
| Project Name               |   | Company Name/CH2M HILL Office |   | Project Manager & Phone # |   | Report Copy to:                |   | Lab 1 #        | Lab 2 #       |
| Requested Completion Date: |   | Sampling Requirements         |   | Sample Disposal:          |   | ANALYSES REQUESTED             |   | Quote #        | Kit Request # |
|                            |   | SDWA NPDES RCRA OTHER         |   | Dispose Return            |   |                                |   | Project #      |               |
|                            |   |                               |   |                           |   |                                |   | No. of Samples | Page of       |
|                            |   |                               |   |                           |   |                                |   | COC Rev        | Login         |
|                            |   |                               |   |                           |   |                                |   | LIMS Ver       | Ack Gen       |
|                            |   |                               |   |                           |   |                                |   | LAB 1 ID       | LAB 2 ID      |
|                            |   |                               |   |                           |   |                                |   | REMARKS        |               |
|                            |   |                               |   |                           |   |                                |   |                |               |
| 2/13 1400                  | X | X                             | X | O                         | H | -                              | 3 |                |               |
| ↓                          | X | X                             | X | O                         | H | -                              | 3 |                |               |
| ↓                          | X | X                             | X | O                         | H | -                              | 3 |                |               |
| 2/13 1440                  | X | X                             | X | O                         | H | -                              | 4 |                |               |
| ↓                          | X | X                             | X | O                         | H | -                              | 4 |                |               |
| ↓                          | X | X                             | X | O                         | H | -                              | 4 |                |               |
| 2/18 1130                  | X | X                             | X | O                         | H | -                              | 2 |                |               |
| ↓                          | X | X                             | X | O                         | H | -                              | 2 |                |               |
| ↓                          | X | X                             | X | O                         | H | -                              | 2 |                |               |

| Sampled By & Title |  | Date/Time     | Relinquished By |  | Date/Time     | HAZWRAP/NESSA:               |
|--------------------|--|---------------|-----------------|--|---------------|------------------------------|
| DAVE LACHER        |  | 2/23/93 11:40 | DAVE LACHER     |  | 2/23/93       | Y N                          |
| DAVE LACHER        |  | 2/23/93 10:00 | DAVE LACHER     |  | 2/23/93 11:15 | QC Level: 1 2 3 Other: _____ |
| DANA HEINEZ NCA    |  | 2/23/93 11:15 | DANA HEINEZ NCA |  |               | COC Rec ICE                  |
|                    |  |               |                 |  |               | Ana Req TEMP                 |
|                    |  |               |                 |  |               | Cust Seal Ph                 |

| Work Authorized By |  | Remarks | Shipped Via               |  | Shipping # |
|--------------------|--|---------|---------------------------|--|------------|
|                    |  |         | UPS BUS Fed-Ex Hand Other |  |            |



|                               |  |                                   |  |  |  |                                |  |                        |  |
|-------------------------------|--|-----------------------------------|--|--|--|--------------------------------|--|------------------------|--|
| CH2M HILL Project #           |  | Purchase Order #                  |  | LAB TEST CODES   |  | SHADED AREA - FOR LAB USE ONLY |  |                        |  |
| Project Name                  |  | Company Name/CH2M HILL Office     |  | # OF CONTAINERS  |  | Lab 1 #                        |  | Lab 2 #                |  |
| Project Manager & Phone #     |  | Report Copy to:                   |  |  |  | Quote #                        |  | Kit Request #          |  |
| Requested Completion Date:    |  | Sampling Requirements             |  | ANALYSES REQUESTED   |  | Project #                      |  |                        |  |
| Mr. [ ]<br>Ms. [ ]<br>Dr. [ ] |  | SDWA NPDES RCRA OTHER             |  | Sulfides<br>Total Nitrogen<br>Total Phosphorus<br>Total Vol. Solids<br>% Solids<br>Particle Size |  | No. of Samples                 |  | Page of                |  |
| Sample Disposal:              |  | Dispose Return                    |  |  |  | COC Rev                        |  | Login                  |  |
| Type                          |  | Matrix                            |  | CLIENT SAMPLE ID (9 CHARACTERS)  |  | REMARKS                        |  | LAB 1 ID               |  |
| Date Time                     |  | C O M P G R A B W A T E R S O I L |  |  |  | LAB 2 ID                       |  |                        |  |
| 2/18 12:30                    |  | X                                 |  | 1  |  | 4oz Glass Bottle               |  | 3020775                |  |
| ↓                             |  | X                                 |  | 1  |  | 8oz Glass                      |  |                        |  |
| ↓                             |  | X                                 |  | 1  |  | X 16oz Poly                    |  |                        |  |
| Sampled By & Title            |  | Date/Time                         |  | Relinquished By  |  | Date/Time                      |  | HAZWRAP/NESSA: Y N     |  |
| Received By                   |  | Date/Time                         |  | Relinquished By  |  | Date/Time                      |  | QC Level: 1 2 3 Other: |  |
| Received By                   |  | Date/Time                         |  | Relinquished By  |  | Date/Time                      |  | COC Rec                |  |
| Received By                   |  | Date/Time                         |  | Relinquished By  |  | Date/Time                      |  | Ana Req                |  |
| Shipped Via                   |  | Shipping #                        |  | Cust Seal  |  | Ph                             |  |                        |  |
| Work Authorized By            |  | Remarks                           |  |  |  |                                |  |                        |  |

ATTACHMENT II

LABORATORY DATA REPORT  
North Creek Analytical Laboratory

Marine Sediment Samples from Pigeon Harbor, American Samoa  
February 1993

STARRIST SAMOA LTD. AND VCS SAMOA PACIFIC COMPANY



18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-2569  
Phone (206) 481-9200 • FAX (206) 485-2992

CH2M Hill  
777 108th Avenue NE  
Bellevue, WA 98009  
Attention: David Wilson

Client Project ID: Starkist/Samoa NPDES  
Matrix: Soil  
Analysis for: Moisture Content  
First Sample #: 302-0769

Received: Feb 23, 1993  
Reported: Mar 9, 1993

**LABORATORY ANALYSIS FOR: Moisture Content**

| Sample Number | Sample Description | Total Solids % | Moisture Content % |
|---------------|--------------------|----------------|--------------------|
| 302-0769      | IH-3               | 30             | 70                 |
| 302-0770      | IH-1               | 26             | 74                 |
| 302-0771      | IH-2               | 45             | 55                 |
| 302-0772      | OH-3               | 58             | 42                 |
| 302-0773      | OH-4               | 69             | 31                 |
| 302-0774      | OH-2               | 59             | 41                 |
| 302-0775      | OH-1               | 60             | 40                 |

The enclosed analytical results for soils, sediments and sludges have been converted to a DRY WEIGHT reporting basis.  
To attain the wet weight "as received" equivalent, multiply the dry weight result by the decimal fraction of percent Total Solids.  
The results in this report apply only to the samples analyzed, as indicated on the custody document.  
This analytical report is to be reproduced only in its entirety.

NORTH CREEK ANALYTICAL inc

  
Steven G. Mayer  
Project Manager



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Phone (206) 481-9200 • FAX (206) 485-2992

|                         |                    |                         |           |              |
|-------------------------|--------------------|-------------------------|-----------|--------------|
| CH2M Hill               | Client Project ID: | Starkist/Samoa NPDES    | Sampled:  | Feb 13, 1993 |
| 777 108th Avenue NE     | Analysis Method:   | EPA 351.3               | Received: | Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis for:      | Total Kjeldahl Nitrogen | Analyzed: | Mar 2, 1993  |
| Attention: David Wilson | First Sample #:    | 302-0769                | Reported: | Mar 9, 1993  |

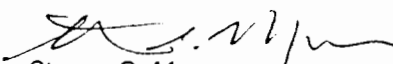
**LABORATORY ANALYSIS FOR: Total Kjeldahl Nitrogen**

| Sample Number | Sample Description | Reporting Limit<br>mg/kg (ppm) | Sample Result<br>mg/kg |
|---------------|--------------------|--------------------------------|------------------------|
| 302-0769      | IH-3               | 1.0                            | 1,100                  |
| 302-0770      | IH-1               | 1.0                            | 1,700                  |
| 302-0771      | IH-2               | 1.0                            | 770                    |
| 302-0772      | OH-3               | 1.0                            | 410                    |
| 302-0773      | OH-4               | 1.0                            | 470                    |
| 302-0774      | OH-2<br>2/18/93    | 1.0                            | 470                    |
| 302-0775      | OH-1<br>2/18/93    | 1.0                            | 480                    |
| BLK030293     | Method Blank       | 1.0                            | N.D.                   |

Analytes reported as N.D. were not detected above the stated Reporting Limit.  
The results reported above are on a dry weight basis.

NORTH CREEK ANALYTICAL inc

Please Note:  
Report was amended on March 23, 1993.

  
Steven G. Mayer  
Project Manager



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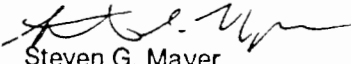
|                         |   |                        |
|-------------------------|---|------------------------|
| CH2M Hill               | Client Project ID: Starkist/Samoa NPDES | Sampled: Feb 13, 1993  |
| 777 108th Avenue NE     | Analysis Method: EPA 6010               | Received: Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis for: Total Phosphorus          | Analyzed: Feb 25, 1993 |
| Attention: David Wilson | First Sample #: 302-0769                | Reported: Mar 9, 1993  |

**LABORATORY ANALYSIS FOR: Total Phosphorus**

| Sample Number | Sample Description | Reporting Limit<br>mg/kg (ppm) | Sample Result<br>mg/kg |
|---------------|--------------------|--------------------------------|------------------------|
| 302-0769      | IH-3               | 10                             | 1,500                  |
| 302-0770      | IH-1               | 10                             | 1,200                  |
| 302-0771      | IH-2               | 10                             | 1,100                  |
| 302-0772      | OH-3               | 10                             | 530                    |
| 302-0773      | OH-4               | 10                             | 470                    |
| 302-0774      | OH-2<br>2/18/93    | 10                             | 570                    |
| 302-0775      | OH-1<br>2/18/93    | 10                             | 600                    |
| BLK022593     | Method Blank       | 10                             | N.D.                   |

Analytes reported as N.D. were not detected above the stated Reporting Limit.  
The results reported above are on a dry weight basis.

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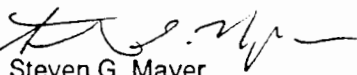
|                         |                    |                      |           |              |
|-------------------------|--------------------|----------------------|-----------|--------------|
| CH2M Hill               | Client Project ID: | Starkist/Samoa NPDES | Sampled:  | Feb 13, 1993 |
| 777 108th Avenue NE     | Analysis Method:   | PSDDA Conventional   | Received: | Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis for:      | Sulfide              | Analyzed: | Feb 25, 1993 |
| Attention: David Wilson | First Sample #:    | 302-0769             | Reported: | Mar 9, 1993  |

**LABORATORY ANALYSIS FOR: Sulfide**

| Sample Number | Sample Description | Reporting Limit<br>mg/kg (ppm) | Sample Result<br>mg/kg |
|---------------|--------------------|--------------------------------|------------------------|
| 302-0769      | IH-3               | 0.12                           | 34                     |
| 302-0770      | IH-1               | 0.12                           | 41                     |
| 302-0771      | IH-2               | 0.12                           | 22                     |
| 302-0772      | OH-3               | 0.12                           | N.D.                   |
| 302-0773      | OH-4               | 0.12                           | N.D.                   |
| 302-0774      | OH-2<br>2/18/93    | 0.12                           | 0.46                   |
| 302-0775      | OH-1<br>2/18/93    | 0.12                           | 0.75                   |
| BLK022593     | Method Blank       | 0.12                           | N.D.                   |

Analytes reported as N.D. were not detected above the stated Reporting Limit.  
The results reported above are on a dry weight basis.

**NORTH CREEK ANALYTICAL inc**

  
Steven G. Mayer  
Project Manager



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|                         |   |                        |
|-------------------------|---|------------------------|
| CH2M Hill               | Client Project ID: Starkist/Samoa NPDES | Sampled: Feb 13, 1993  |
| 777 108th Avenue NE     | Sample Descript: Sediment, IH-3         | Received: Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis Method: ASTM D422-63           | Analyzed: Feb 24, 1993 |
| Attention: David Wilson | Sample Number: 302-0769                 | Reported: Mar 9, 1993  |

### LABORATORY ANALYSIS: PARTICLE SIZE DISTRIBUTION

| Sieve Size | Hydrometer<br>< Phi Size | Particle Size<br>microns | Passing % | Fractional % |
|------------|--------------------------|--------------------------|-----------|--------------|
| 4          |                          | >4750                    | 100       | 0            |
| 10         |                          | 4750 - 2000              | 98        | 2            |
| 20         |                          | 2000 - 850               | 96        | 2            |
| 40         |                          | 850 - 425                | 93        | 3            |
| 60         |                          | 425 - 250                | 89        | 5            |
| 140        |                          | 250 - 106                | 75        | 14           |
| 200        |                          | 106 - 75                 | 70        | 5            |
| 230        |                          | 75 - 62.5                | 68        | 2            |
|            | 4                        | 62.5 - 31.2              | 22        | 46           |
|            | 5                        | 31.2 - 15.6              | 16        | 5            |
|            | 6                        | 15.6 - 7.8               | 5         | 11           |
|            | 7                        | 7.8 - 3.9                | 0         | 5            |
|            | 8                        | 3.9 - 1.9                | 0         | 0            |
|            | 9                        | 1.9 - 0.9                | 0         | 0            |
|            | 10                       | <0.9                     | 0         | 0            |

Total Solids, %: 30  
Total Volatile Solids, %: 14

NORTH CREEK ANALYTICAL, Inc.

  
Steven G. Mayer  
Project Manager



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|                         |   |                        |
|-------------------------|---|------------------------|
| CH2M Hill               | Client Project ID: Starkist/Samoa NPDES | Sampled: Feb 13, 1993  |
| 777 108th Avenue NE     | Sample Descript: Sediment, IH-1         | Received: Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis Method: ASTM D422-63           | Analyzed: Feb 24, 1993 |
| Attention: David Wilson | Sample Number: 302-0770                 | Reported: Mar 9, 1993  |

### LABORATORY ANALYSIS: PARTICLE SIZE DISTRIBUTION

| Sieve Size | Hydrometer<br>< Phi Size | Particle Size<br>microns | Passing % | Fractional % |
|------------|--------------------------|--------------------------|-----------|--------------|
| 4          |                          | >4750                    | 97        | 3            |
| 10         |                          | 4750 - 2000              | 96        | 1            |
| 20         |                          | 2000 - 850               | 92        | 4            |
| 40         |                          | 850 - 425                | 84        | 8            |
| 60         |                          | 425 - 250                | 79        | 5            |
| 140        |                          | 250 - 106                | 71        | 8            |
| 200        |                          | 106 - 75                 | 70        | 1            |
| 230        |                          | 75 - 62.5                | 70        | 0            |
|            | 4                        | 62.5 - 31.2              | 16        | 54           |
|            | 5                        | 31.2 - 15.6              | 11        | 5            |
|            | 6                        | 15.6 - 7.8               | 5         | 6            |
|            | 7                        | 7.8 - 3.9                | 0         | 5            |
|            | 8                        | 3.9 - 1.9                | 0         | 0            |
|            | 9                        | 1.9 - 0.9                | 0         | 0            |
|            | 10                       | <0.9                     | 0         | 0            |

Total Solids, %: 27  
Total Volatile Solids, %: 19

NORTH CREEK ANALYTICAL, Inc.

  
Steven G. Mayer  
Project Manager





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|                         |   |                        |
|-------------------------|---|------------------------|
| CH2M Hill               | Client Project ID: Starkist/Samoa NPDES | Sampled: Feb 13, 1993  |
| 777 108th Avenue NE     | Sample Descript: Sediment, IH-2         | Received: Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis Method: ASTM D422-63           | Analyzed: Feb 24, 1993 |
| Attention: David Wilson | Sample Number: 302-0771                 | Reported: Mar 9, 1993  |

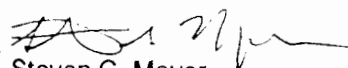
### LABORATORY ANALYSIS: PARTICLE SIZE DISTRIBUTION

| Sieve Size | Hydrometer<br>< Phi Size | Particle Size<br>microns | Passing % | Fractional % |
|------------|--------------------------|--------------------------|-----------|--------------|
| 4          |                          | >4750                    | 100       | 0            |
| 10         |                          | 4750 - 2000              | 100       | 0            |
| 20         |                          | 2000 - 850               | 100       | 0            |
| 40         |                          | 850 - 425                | 99        | 0            |
| 60         |                          | 425 - 250                | 99        | 1            |
| 140        |                          | 250 - 106                | 96        | 2            |
| 200        |                          | 106 - 75                 | 94        | 3            |
| 230        |                          | 75 - 62.5                | 92        | 2            |
|            | 4                        | 62.5 - 31.2              | 50        | 42           |
|            | 5                        | 31.2 - 15.6              | 22        | 28           |
|            | 6                        | 15.6 - 7.8               | 9         | 13           |
|            | 7                        | 7.8 - 3.9                | 6         | 3            |
|            | 8                        | 3.9 - 1.9                | 3         | 3            |
|            | 9                        | 1.9 - 0.9                | 0         | 3            |
|            | 10                       | <0.9                     | 0         | 0            |

Total Solids, %: 45  
Total Volatile Solids, %: 9.3

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Please Note:  
Report was amended on March 19, 1993.

  
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Project Manager



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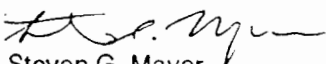
|                         |                    |                      |           |              |
|-------------------------|--------------------|----------------------|-----------|--------------|
| CH2M Hill               | Client Project ID: | Starkist/Samoa NPDES | Sampled:  | Feb 13, 1993 |
| 777 108th Avenue NE     | Sample Descript:   | Sediment, OH-3       | Received: | Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis Method:   | ASTM D422-63         | Analyzed: | Feb 24, 1993 |
| Attention: David Wilson | Sample Number:     | 302-0772             | Reported: | Mar 9, 1993  |

### LABORATORY ANALYSIS: PARTICLE SIZE DISTRIBUTION

| Sieve Size | Hydrometer<br>< Phi Size | Particle Size<br>microns | Passing % | Fractional % |
|------------|--------------------------|--------------------------|-----------|--------------|
| 4          |                          | >4750                    | 86        | 14           |
| 10         |                          | 4750 - 2000              | 62        | 24           |
| 20         |                          | 2000 - 850               | 52        | 10           |
| 40         |                          | 850 - 425                | 45        | 7            |
| 60         |                          | 425 - 250                | 38        | 7            |
| 140        |                          | 250 - 106                | 18        | 20           |
| 200        |                          | 106 - 75                 | 12        | 6            |
| 230        |                          | 75 - 62.5                | 10        | 2            |
|            | 4                        | 62.5 - 31.2              | 2         | 8            |
|            | 5                        | 31.2 - 15.6              | 1         | 1            |
|            | 6                        | 15.6 - 7.8               | 1         | 0            |
|            | 7                        | 7.8 - 3.9                | 1         | 0            |
|            | 8                        | 3.9 - 1.9                | 1         | 0            |
|            | 9                        | 1.9 - 0.9                | 0         | 1            |
|            | 10                       | <0.9                     | 0         | 0            |

Total Solids, %: 58  
Total Volatile Solids, %: 3.1

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Project Manager



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CH2M Hill  
777 108th Avenue NE  
Bellevue, WA 98009  
Attention: David Wilson

Client Project ID: Starkist/Samoa NPDES  
Sample Descript: Sediment, OH-4  
Analysis Method: ASTM D422-63  
Sample Number: 302-0775

Received: Feb 13, 1996  
Reviewed: Feb 23, 1996  
Analyzed: Feb 24, 1996

### LABORATORY ANALYSIS: PARTICLE SIZE DISTRIBUTION

| Sieve Size | Hydrometer<br>< Phi Size | Particle Size<br>microns | Passing % |
|------------|--------------------------|--------------------------|-----------|
| 4          |                          | >4750                    | 97        |
| 10         |                          | 4750 - 2000              | 89        |
| 20         |                          | 2000 - 850               | 75        |
| 40         |                          | 850 - 425                | 62        |
| 60         |                          | 425 - 250                | 57        |
| 140        |                          | 250 - 106                | 50        |
| 200        |                          | 106 - 75                 | 46        |
| 230        |                          | 75 - 62.5                | 44        |
|            | 4                        | 62.5 - 31.2              | 20        |
|            | 5                        | 31.2 - 15.6              | 7         |
|            | 6                        | 15.6 - 7.8               | 3         |
|            | 7                        | 7.8 - 3.9                | 1         |
|            | 8                        | 3.9 - 1.9                | 1         |
|            | 9                        | 1.9 - 0.9                | 0         |
|            | 10                       | <0.9                     | 0         |

Total Solids, %: 69

Total Volatile Solids, %: 4.2

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Project Manager

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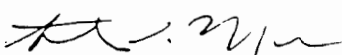
|                         |   |                        |
|-------------------------|---|------------------------|
| CH2M Hill               | Client Project ID: Starkist/Samoa NPDES | Sampled: Feb 18, 1993  |
| 777 108th Avenue NE     | Sample Descript: Sediment, OH-2         | Received: Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis Method: ASTM D422-63           | Analyzed: Feb 24, 1993 |
| Attention: David Wilson | Sample Number: 302-0774                 | Reported: Mar 9, 1993  |

### LABORATORY ANALYSIS: PARTICLE SIZE DISTRIBUTION

| Sieve Size | Hydrometer<br>< Phi Size | Particle Size<br>microns | Passing % | Fractional % |
|------------|--------------------------|--------------------------|-----------|--------------|
| 4          |                          | >4750                    | 100       | 0            |
| 10         |                          | 4750 - 2000              | 100       | 0            |
| 20         |                          | 2000 - 850               | 100       | 0            |
| 40         |                          | 850 - 425                | 100       | 0            |
| 60         |                          | 425 - 250                | 99        | 1            |
| 140        |                          | 250 - 106                | 95        | 4            |
| 200        |                          | 106 - 75                 | 87        | 8            |
| 230        |                          | 75 - 62.5                | 82        | 6            |
|            | 4                        | 62.5 - 31.2              | 22        | 60           |
|            | 5                        | 31.2 - 15.6              | 17        | 5            |
|            | 6                        | 15.6 - 7.8               | 10        | 7            |
|            | 7                        | 7.8 - 3.9                | 2         | 7            |
|            | 8                        | 3.9 - 1.9                | 0         | 2            |
|            | 9                        | 1.9 - 0.9                | 0         | 0            |
|            | 10                       | <0.9                     | 0         | 0            |

Total Solids, %: 59  
Total Volatile Solids, %: 4.9

NORTH CREEK ANALYTICAL, Inc.

  
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Project Manager



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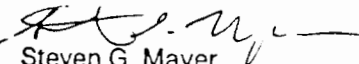
|                         |   |                        |
|-------------------------|---|------------------------|
| CH2M Hill               | Client Project ID: Starkist/Samoa NPDES | Sampled: Feb 18, 1993  |
| 777 108th Avenue NE     | Sample Descript: Sediment, OH-1         | Received: Feb 23, 1993 |
| Bellevue, WA 98009      | Analysis Method: ASTM D422-63           | Analyzed: Feb 24, 1993 |
| Attention: David Wilson | Sample Number: 302-0775                 | Reported: Mar 9, 1993  |

### LABORATORY ANALYSIS: PARTICLE SIZE DISTRIBUTION

| Sieve Size | Hydrometer<br>< Phi Size | Particle Size<br>microns | Passing % | Fractional % |
|------------|--------------------------|--------------------------|-----------|--------------|
| 4          |                          | >4750                    | 100       | 0            |
| 10         |                          | 4750 - 2000              | 100       | 0            |
| 20         |                          | 2000 - 850               | 100       | 0            |
| 40         |                          | 850 - 425                | 100       | 0            |
| 60         |                          | 425 - 250                | 99        | 1            |
| 140        |                          | 250 - 106                | 97        | 2            |
| 200        |                          | 106 - 75                 | 93        | 4            |
| 230        |                          | 75 - 62.5                | 89        | 4            |
|            | 4                        | 62.5 - 31.2              | 30        | 59           |
|            | 5                        | 31.2 - 15.6              | 21        | 9            |
|            | 6                        | 15.6 - 7.8               | 12        | 9            |
|            | 7                        | 7.8 - 3.9                | 6         | 6            |
|            | 8                        | 3.9 - 1.9                | 3         | 3            |
|            | 9                        | 1.9 - 0.9                | 0         | 3            |
|            | 10                       | <0.9                     | 0         | 0            |

Total Solids, %: 60  
Total Volatile Solids, %: 5.6

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Project Manager



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CH2M Hill  
777 108th Avenue NE  
Bellevue, WA 98009  
Attention: David Wilson

Client Project ID: Starkist/Samoa NPDES  
Sample Matrix : Soil  
Units: mg/kg (ppm)

Analyst: K. Arvon

Reported: Mar 9, 1993

## INORGANIC QUALITY CONTROL DATA REPORT

| ANALYTE | Phosphorus | Sulfide |
|---------|------------|---------|
|---------|------------|---------|

|                |              |              |
|----------------|--------------|--------------|
| EPA Method:    | 6010         | PSDDA        |
| Date Analyzed: | Feb 25, 1993 | Feb 25, 1993 |

### ACCURACY ASSESSMENT

|                           |     |     |
|---------------------------|-----|-----|
| LCS Spike<br>Conc. Added: | 500 | 5.0 |
| LCS Spike<br>Result:      | 390 | 4.7 |
| LCS Spike<br>% Recovery:  | 78  | 94  |
| Upper Control<br>Limit:   | 125 | 125 |
| Lower Control<br>Limit:   | 75  | 75  |

### PRECISION ASSESSMENT

|                           |          |          |
|---------------------------|----------|----------|
| Sample #:                 | 302-0772 | 302-0775 |
| Original:                 | 310      | 0.75     |
| Duplicate:                | 200      | 0.66     |
| Relative %<br>Difference: | 43, Q-6  | 13       |
| Maximum<br>RPD:           | 25       | 25       |

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Please Note:

Q-6 = The RPD value for this QC sample is outside of the NCA established control limits.

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Project Manager



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CH2M Hill  
777 108th Avenue NE  
Bellevue, WA 98009  
Attention: David Wilson

Client Project ID: Starkist/Samoa NPDES  
Sample Matrix : Soil  
Units: mg/kg (ppm)

Analyst: K. Arvon

Reported: Mar 25, 1993

## INORGANIC QUALITY CONTROL DATA REPORT

| ANALYTE | Total Kjeldahl<br>Nitrogen |
|---------|----------------------------|
|---------|----------------------------|

EPA Method: 351.3  
Date Analyzed: Mar 23, 1993

### ACCURACY ASSESSMENT

LCS Spike  
Conc. Added: 500

LCS Spike  
Result: 476

LCS Spike  
% Recovery: 95

Upper Control  
Limit: 125

Lower Control  
Limit: 75

### PRECISION ASSESSMENT

Sample #: 302-0773

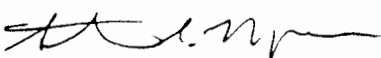
Original: 460

Duplicate: 460

Relative %  
Difference: 0.0

Maximum  
RPD: 25

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Steven G. Mayer  
Project Manager



SEDIMENT STUDY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, Ca. 94105-3901

DATE: January 7, 1993

MEMORANDUM

SUBJECT: Request for Review of Sediment Monitoring Plan for  
Tuna Cannery NPDES Permits

TO: Janet Hashimoto  
Chief, Oceans and Estuaries Section

FROM: Pat Young *Pat*  
American Samoa Program Manager (E-4)

Attached please find a copy of the draft plan for sediment monitoring of Pago Pago Harbor, the location of the joint cannery outfall in American Samoa. This study is required by the canneries' recently-issued NPDES permits. We would greatly appreciate your assistance in having the study plan reviewed. If additional information is needed to assist in the review, please let me know.

Because this study is scheduled for the first week in February, we would greatly appreciate an expedited review of this draft and would appreciate any comments by January 15th (sorry for the short turn around time). Should the reviewer need to discuss the technical aspects of the proposal, he/she should feel free to contact Steve Costa of CH2MHill at (510) 251-2426-2251. Steve can also come into the office to discuss if necessary. Please call me at (415) 744-1591 if you have any questions.

Thanks again for your assistance.

Enclosure

cc: Doug Liden (W-5-1)  
Mike Lee (E-4)





Engineers  
Planners  
Economists  
Scientists

Copy to Doug Lide,  
Janet Hashimoto  
Mike Lee

FAX No. 510/893-8205

## FAX Cover Sheet

### INFORMATION TO:

Name: PAT YOUNG

Office No.: 415-744-1604 1591

Fax No.: 415-744-1604

Name: \_\_\_\_\_

Office No.: \_\_\_\_\_

FAX No.: \_\_\_\_\_

### INFORMATION FROM:

Name: STEVE COSTA

Company: CH2M HILL

Subject: JOINT CANNERY OUTFALL  
SEDIMENT MONITORING PLAN

Date: 6 JANUARY 93

Do you want your original back? ☒ YES ☐ NO

TOTAL NO. OF PAGES TRANSMITTED INCLUDING COVER SHEET 13

IF YOU DO NOT RECEIVE ALL OF THE PAGES, PLEASE CALL OUR RECEPTIONIST AT 510/251-2426  
BETWEEN 7:30 A.M. AND 5:30 P.M. PACIFIC TIME.

REMARKS: PAT -  
Here is Sediment Study Plan, I  
am available to meet with your  
reviewer if that will help  
speed things up any  
Steve

**AGENCY REVIEW DRAFT**

**JOINT CANNERY OUTFALL  
SEDIMENT MONITORING STUDY PLAN**

**for**

**StarKist Samoa, Inc.**

**and**

**VCS Samoa Packing Company**

**to comply with NPDES Permits**

**AS0000019**

**AS0000027**

**JANUARY 6, 1992**

**prepared by**

**CH2M HILL**

AGENCY REVIEW DRAFT

6 January 1993

## JOINT CANNERY OUTFALL DILUTION STUDY PLAN

### INTRODUCTION

This Sediment Monitoring Study Plan presents a plan for conducting field collections and laboratory analyses of the marine sediments at seven sites in the inner and outer regions of Pago Pago Harbor, American Samoa. This sediment study plan is required under the conditions of the United States Environmental Protection Agency (EPA) NPDES Permit No. AS0000019 for Star-Kist Samoa, Inc. and NPDES Permit No. AS0000027 for VCS Samoa Packing Company. This document describes the objectives, approach, and field and laboratory methods for sediment monitoring in the harbor.

Section G of the Star-Kist Samoa and Samoa Packing NPDES permits addresses the Sediment Monitoring as follows:

*"Sediment monitoring is conducted to determine the character of the sediments in relation to long-term high nutrient discharge by the permittee in the harbor and if harbor recovery will be affected by resuspension of the nutrients.*

*The permittee, cooperatively with {Samoa Packing Co.; Star-Kist Samoa, Inc.} shall undertake a yearly sediment monitoring program in Pago Pago Harbor in order to assess the concentration of nutrient and organic components, the distribution of stored nutrients, the size of the nutrient reservoir, and the rate of accumulation of nutrients. Seven sites shall be located within Pago Pago Harbor and analyzed for total nitrogen, total phosphorus, percent organics, percent solids, bulk density, oxidation reduction potential, and sulfides. Three sites shall be located in inner Pago Pago Harbor and four sites shall be located in the outer harbor. These sites and monitoring plan shall be submitted within three months of the effective date of the permit for approval by ASEPA and EPA. Thereafter, these sites shall be approved annually by the anniversary date of the effective date of the permit. A report of the sediment monitoring program findings shall be submitted to the ASEPA and EPA 90 days after completion of sampling.*

*After the first two studies have been performed and the results have been assessed, the permit may be reopened for the inclusion of a more frequent or less frequent monitoring schedule."*

This study plan is being submitted to EPA and American Samoa Environmental Protection Agency (ASEPA) to comply with the NPDES permit condition of Section G.

## AGENCY REVIEW DRAFT

6 January 1993

## APPROACH

The joint cannery outfall operated by Star-Kist Samoa and Samoa Packing extends a distance of approximately 1.5 miles from the cannery locations on the north shore of the inner harbor into the outer harbor offshore of Anasopopo Point. The outfall consists of a 16-inch HPDE pipe that terminates with a multiport long diffuser section located at a depth of approximately 176 feet below MLLW. The diffuser section has 4 active ports on alternating sides of the pipe at a spacing of 10 feet. The diffuser ports are all 5-inches in diameter and discharge horizontally. The approved zone of mixing zone boundary is defined according to Figure 1 in the NPDES permits.

## OBJECTIVES

The objectives of the Sediment Monitoring Study are: (1) to evaluate the characteristics and nutrient load of the marine sediments in the vicinity of the canneries previous (abandoned) outfalls in the inner harbor; (2) to evaluate the characteristics and nutrient load of the marine sediments in the vicinity of the new joint cannery outfall diffuser in the outer harbor; (3) to provide data for an evaluation of changes in harbor sediments over time. Sediments are to be collected from seven sites, three sites proximate to the historic cannery outfalls in the inner harbor, three sites proximate to the new diffuser, and one site at the Utulei outfall discharge site. The relative location of the seven sediment sampling sites are shown in Figure 1.

## SAMPLE SITE LOCATIONS

The location of the sampling sites was established based on the predominant current directions at the outfall areas, bathymetry of the area, limited available information on sediment physical characteristics, and the location of point source discharges of nutrients. The wastewater plume behavior and transport direction will be confirmed through the field dye study measurements. The sample sites are shown in Figure 1 and are located as follows:

- Inner harbor site IH-1 will be located within 100 feet of the previous cannery outfalls
- Inner harbor site IH-2 will be located within 500 feet and directly south of the previous cannery outfalls
- Inner harbor site IH-3 will be located at the seaward end of the inner harbor
- Outer harbor site OH-1 will be located about 400 feet NNE of the new outfall diffuser

## AGENCY REVIEW DRAFT

6 January 1993

- Outer harbor site OH-2 will be located about 400 feet SSW of the new outfall diffuser
- Outer harbor site OH-3 will be located directly across the harbor from OH-1 and OH-2
- Outer harbor site OH-4 will be located seaward of the outfall diffuser at the seaward end of the outer harbor

## DATA COLLECTION AND ANALYSIS

Five separate samples will be collected at each sampling site and then composited to provide a single representative composite sample for chemical analysis. The field collections for the sediment studies will start in early February 1993, after plan approval by EPA and USEPA. The sediment physical characteristics at each sampling site will be described and photographed in the field.

Chemical analysis will include those listed in the NPDES permit, using analytical and QA/QC procedures provided in the Standard Methods for the Examination of Water and Wastewater (1989) and Procedures for Handling and Chemical Analysis of Sediment and Water Samples (U.S. EPA and Army COE, 1981).

Field and laboratory analytical data will be processed and presented in tabular formats in a sediment monitoring study report, and supporting data will be included in the report appendix.

## MONITORING SCHEDULE

The NPDES permits specify yearly collections of sediment. CH2M HILL and the canneries have proposed to modify this schedule without decreasing the number of monitoring episodes. The modification provides for the first two sampling episodes to be made during the first year of the study about six months apart, the third sampling episode to be during the third year, approximately 18 months after the second, and subsequent collections annually thereafter or as determined after review of initial results.

The advantages to this modification include:

- A compressed time interval when sediment characteristics are expected to change most rapidly near the previous discharge locations in the inner harbor. Changes in sediment nutrient concentration near the previous outfalls can be expected to vary in a fashion similar to a first order decay phenomena. Most

**AGENCY REVIEW DRAFT**  
**6 January 1993**

of the change will be soon after the source removal (cannery discharge). With time the rate of change will probably slow. Therefore, a sampling schedule with more frequent samples at the beginning may better track the changes.

- A compressed time schedule for the initial collections near the new outfall location will provide a better baseline characterization of the sediment characteristics.
- The modified schedule will allow CH2M HILL staff doing the dye studies during year one to be directly involved in the sediment monitoring study and provide an opportunity to train personnel that might do similar collections in the future.

## STUDY METHODS

The sediment monitoring study requires field data and sample collection and subsequent laboratory analysis. The methods to be used for these elements of the study are described below. The field work described in the following sections include the methods and equipment to be used for the field collection of sediments, station positioning, sample handling, and sample shipment. The Laboratory analysis methods listed are compatible with the NPDES permit requirements.

### FIELD EQUIPMENT AND SAMPLING VESSEL

Field equipment requirements for the sediment sampling are listed in Table 1. A work vessel with a two-person scientific staff will be aboard to collect sediment samples by hand, since no vessel with hydraulics is available in American Samoa.

### STATION LOCATIONS AND FIELD POSITIONING

Sediment samples will be collected from a work vessel using five separate grab samples at each of the seven sites. Vessel navigation will be done by using a Motorola Mini-Ranger III electronic positioning system. Use of a Mini-Ranger III will allow maximum flexibility in establishing sampling locations and will provide range accuracy of approximately  $\pm 2$  meters. A marker buoy will be deployed at the precalculated Mini-Ranger position of the new outfall diffuser prior to collecting sediment samples at the outer harbor outfall sites.

**AGENCY REVIEW DRAFT**  
**6 January 1993**

## **SEDIMENT SAMPLE COLLECTION**

Sediment sampling will be conducted in accordance with the Procedures for Handling and Chemical Analysis of Sediment and Water Samples (U.S. EPA and Army COE, 1981). Sediment samples will be collected using a 0.0225 square meter Petite Ponar grab sampler. The Petite Ponar sampler is a weighted sediment grab sampler designed to penetrate and collect undisturbed samples of sediments ranging from silts to coarse gravels. This type of sampler has been used previously to collect sediment samples throughout Pago Pago Harbor. The grab sampler should be able to penetrate and provide a reliable sediment sample of a minimum depth of 4 cm.

Samples will be collected with a minimum of five separate grabs at each of the seven sites. Sufficient sediment materials will be collected at each site to provide adequate material for the sediment chemistry analyses. More than five grabs will be taken if required to collect sufficient material. If the is hard or rocky, has no sediment, or bottom conditions at a site prevent sediment from being recovered, the site will be relocated based on the judgement of experienced scientists on the project staff.

Prior to disturbing the grab samples the following will be recorded in the field logbook: sediment sample penetration depth, color, texture, odor, temperature, pH, and Redox potential. The five (or more) samples from a single site will be composited in a stainless steel bowl, and samples will be taken from the composite for sediment chemistry analyses. The total of seven composite sediment samples for sediment chemistry analysis will be collected.

Samples collected at each site will be labeled with a unique designator to allow sample tracking; each sample designator will consist of a two-letter location code (IH or OH), followed by a numerical station code (1 through 7). Samples for chemical analyses will be immediately iced and/or preserved (as required) and prepared for shipment to the laboratory. The laboratory selection will be finalized prior to field sample collection.

## **LABORATORY ANALYSES**

Each composited sediment sample will be analyzed for the chemicals listed in Table 2. All sample collections will be performed in accordance with the Procedures for Handling and Chemical Analysis of Sediment and Water Samples (U.S. EPA and Army COE, 1981). Sample containers, sample handling requirements and sample preservation requirements are listed in Table 3.

**AGENCY REVIEW DRAFT**

6 January 1993

**QUALITY ASSURANCE AND QUALITY CONTROL**

The quality assurance and quality control objectives for the sediment studies are to collect representative sediments surface samples and provide laboratory chemical and physical measurements that are of known and acceptable quality. The following requirements will be followed to meet the objectives:

- Provide verifiable laboratory chemical analyses with QA to evaluate accuracy and precision targets
- Maintain and document accurate vessel positioning for sample collection
- Provide field equipment redundancy (backup equipment)
- Develop and use a field operations plan
- Examination of samples as collected and subsequent data by experienced scientists

**FIELD OPERATIONS PLAN**

A field operations plan for conducting the sediment sample collections will be developed as the basic element of quality assurance and control activities. The operations plan will include field data sheets, chain of custody forms, and a sample matrix collection checklist.

**EQUIPMENT CALIBRATION**

All equipment will be obtained prior to the beginning of the sediment studies field collections and checked to verify correct operation. Any instrument requiring calibration will be checked and calibrated upon its arrival to confirm that it is in working condition.

The Mini-Ranger will be calibrated to the manufacturer's specifications prior to conducting the dye study. The unit and transponders will be checked against known distances similar to those to be encountered during the study. A calibration range maintained by the National Ocean Service is used for this purpose.



**AGENCY REVIEW DRAFT**

6 January 1993

**DATA ANALYSIS AND PRESENTATION**

Field data will be summarized and vessel positioning data will be processed to calculate and plot the sediment sampling locations. Laboratory chemical and physical data will be reviewed to determine whether analytical accuracy and precision targets were achieved and to assess the laboratory quality assurance. Sediment chemistry results will be presented in tabular formats.

A report of the results will be provided to EPA and USEPA following each monitoring episode (within 90 days of the field sampling). Any proposed revisions to the study plan will be presented in the monitoring report. Review comments from EPA and ASEPA will be incorporated into the revised study plan as appropriate.

AGENCY REVIEW DRAFT  
6 January 1993

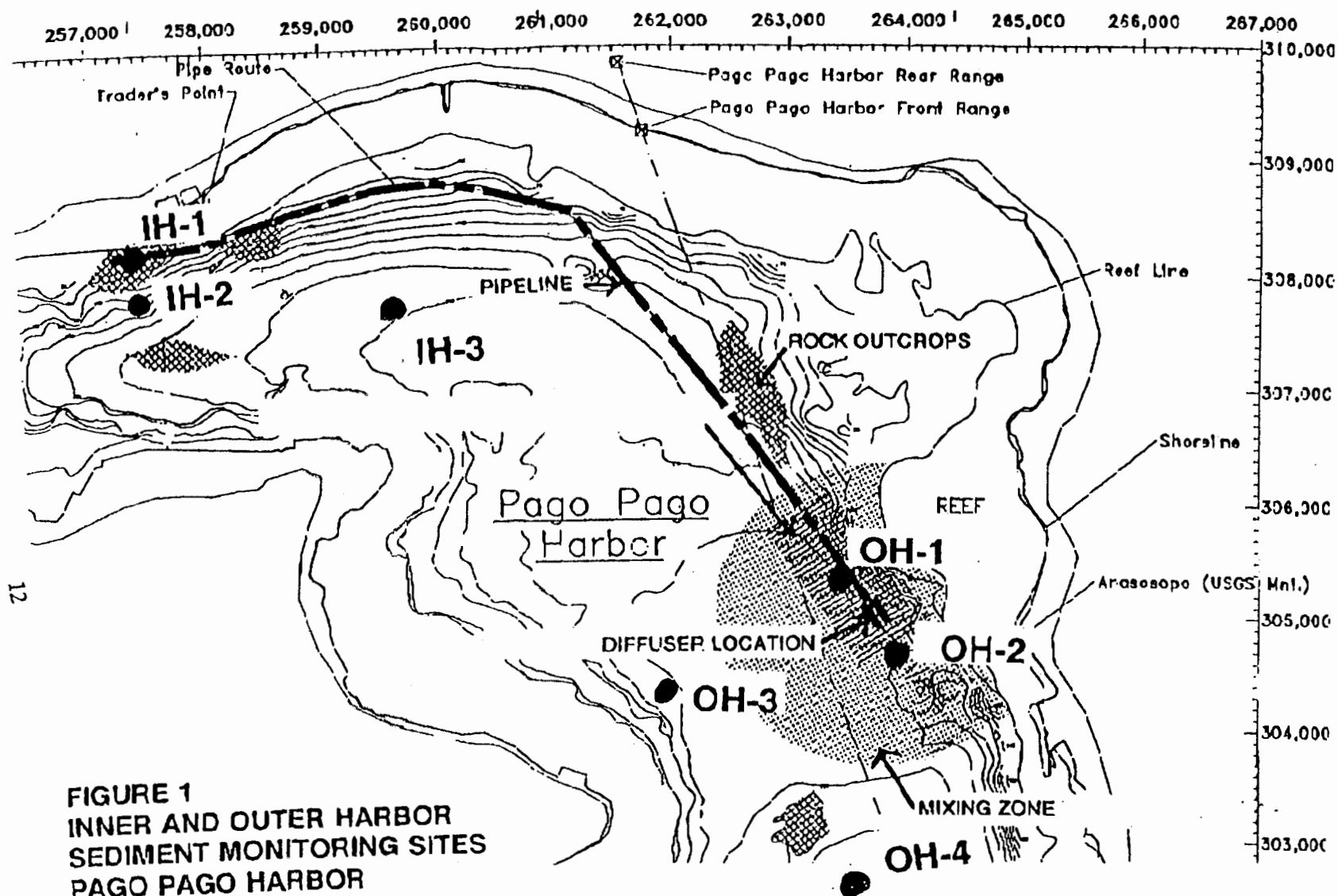
| <p style="text-align: center;">Table 1<br/>Field Equipment for Sediment Field Collections</p> |  |                     |   |
|---|--|---------------------|---|
| Equipment Item  | Purpose  | Number of Units     | Accuracy Standard                         |
| Work Vessel   | Field Sampling Platform  | 1                   | N/A                                       |
| 0.02 meter <sup>2</sup><br>Pctite Ponar<br>Sediment<br>Grab Sampler                           | Collect sediment samples at depth                                  | 1                   | Sediment grab acceptability of 4 cm depth |
| Motorola Mini-Ranger III System   | Microwave positioning System with 3 shore-based transponders       | 1                   | ±2 meters                                 |
| ASTM brass sieves   | Wet sieve sediments from samples                                   | 2                   | N/A                                       |
| Orion Redox Potential and pH Instrument   | Measure sediment oxidation-reduction potential and pH in the field | 1                   | ±0.5 millivolts                           |
| Sample Containers   | Collections of sediments for chemical analyses                     | As required in plan | Pre-cleaned sample containers             |
| Ice Chests  | Sample jar holder, cool samples on ice, and sample shipment        | As required in plan | Pre-cleaned containers                    |

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| Table 2<br>Sediment Chemical Analyses    |            |                         |
|--|------------|-------------------------|
| Parameter                                | EPA Method | Standard<br>Methods No. |
| Total Kjeldahl Nitrogen                  | 175        | 437                     |
| Total Phosphorus                         | 249        | 481                     |
| Sulfides                                 | 284        | 505                     |
| Total Volatile Solids (Percent Organics) | 272        | 95                      |
| Percent Solids                           | 270        | 91                      |
| Bulk Density                             | TBD        | TBD                     |
| Particle Size (Optional)                 | None       | 250 g                   |

AGENCY REVIEW DRAFT  
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| Table 3<br>Sediment Sample Collection and Handling Requirements |              |                     |                                |                    |
|---|--------------|---------------------|--------------------------------|--------------------|
| Parameter   | Holding Time | Minimum Sample Size | Preservation                   | Sample Container   |
| Total Kjeldahl Nitrogen   | 7 days       | 10 g                | Cool, 4°C                      | 250 ml plastic jar |
| Total Phosphorus  | 7 days       | 10 g                | Cool, 4°C                      | 250 ml plastic jar |
| Sulfides  | 7 days       | 20 g                | Cool, 4°C, add 2 ml ZN-acetate | 250 ml plastic jar |
| Total Volatile Solids (Percent Organics)                        | 14 days      | 100 g               | Cool, 4°C                      | 250 ml plastic jar |
| Percent Solids  | None         | 50 g                | Cool, 4°C                      | N/A                |
| Bulk Density  | None         | 50 g                | Cool, 4°C                      | N/A                |
| Particle Size   | None         | 250 g               | Cool, 4°C                      | 250 ml plastic jar |



AGENCY REVIEW DRAFT  
 6 January 1993



VAN CAMP  
SEAFOOD  
COMPANY, INC.

Recd 5/29/97  
my  
Copy to Doug

May 28, 1997

Mr. Norm Lovelace, Chief  
Office of Pacific Island & Native American Programs  
U.S. EPA, Region 9  
75 Hawthorne Street  
San Francisco, CA 94105

Dear Norm:

Enclosed please find the 1997 NPDES Permit Application for VCS Samoa Packing Company.

Please let me know if you need anything further with regard to this application.

Sincerely,

James L. Cox  
Director of Engineering  
and Environmental Affairs

JLC:ms  
Enclosure

| FORM 1<br>GENERAL           |  | U.S. ENVIRONMENTAL PROTECTION AGENCY<br>GENERAL INFORMATION<br>Consolidated Permits Program<br>(Read the "General Instructions" before starting.) |  | I. EPA I.D. NUMBER  |  |
|-----------------------------|--|---|--|---|--|
| LABEL ITEMS                 |  | PLEASE PLACE LABEL IN THIS SPACE  |  | GENERAL INSTRUCTIONS  |  |
| I. EPA I.D. NUMBER          |  |   |  | If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected. |  |
| III. FACILITY NAME          |  |   |  |   |  |
| V. FACILITY MAILING ADDRESS |  |   |  |   |  |
| VI. FACILITY LOCATION       |  |   |  |   |  |

**II. POLLUTANT CHARACTERISTICS**

**INSTRUCTIONS:** Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

| SPECIFIC QUESTIONS   | MARK 'X' |    |               |
|--|----------|----|---------------|
|  | YES      | NO | FORM ATTACHED |
| A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)   |          | X  |               |
| C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)  | X        |    | 2C            |
| E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)   |          | X  |               |
| G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4) |          | X  |               |
| I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)                 |          | X  |               |
| B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)  |          | X  |               |
| D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)  |          | X  |               |
| F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)   |          | X  |               |
| H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)  |          | X  |               |
| J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)             |          | X  |               |

**III. NAME OF FACILITY**

1 SKIP VCS. SAMOA PACKING COMPANY, INC.

**IV. FACILITY CONTACT**

| A. NAME & TITLE (last, first, & title) |                                | B. PHONE (area code & no.) |          |
|--|--------------------------------|----------------------------|----------|
| 2                                      | Gebauer, Herman Plant Ops. Mgr | 684                        | 644 5272 |

**V. FACILITY MAILING ADDRESS**

| A. STREET OR P.O. BOX |              | B. CITY OR TOWN |  | C. STATE | D. ZIP CODE |
|-----------------------|--------------|-----------------|--|----------|-------------|
| 3                     | P.O. BOX 957 |                 |  | AS       | 96799       |

**VI. FACILITY LOCATION**

| A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER |  | B. COUNTY NAME |  | C. CITY OR TOWN |  | D. STATE | E. ZIP CODE | F. COUNTY CODE (if known) |
|---|--|----------------|--|-----------------|--|----------|-------------|---------------------------|
| 5   |  |                |  |                 |  | AS       | 96799       |                           |

CONTINUED FROM THE FRONT

## VII. SIC CODES (4-digit, in order of priority)

| A. FIRST |   |   |   | B. SECOND |           |   |  |
|----------|---|---|---|-----------|-----------|---|--|
| 7        | 2 | 0 | 9 | 1         | (specify) | Processing and canning of tuna fish           |  |
| 7        | 2 | 0 | 4 | 7         | (specify) | Canning of pet food                           |  |
| C. THIRD |   |   |   | D. FOURTH |           |   |  |
| 7        | 2 | 0 | 4 | 8         | (specify) | Processing of fish by-products into fish meal |  |
| 7        |   |   |   |           | (specify) |   |  |

## VIII. OPERATOR INFORMATION

| A. NAME  |  |  |  |             |  |          |  |             |  |   |  | B. Is the name listed in item VIII-A also the owner?                |  |
|--|--|--|--|-------------|--|----------|--|-------------|--|---|--|---|--|
| VCS SAMOA PACKING COMPANY, INC   |  |  |  |             |  |          |  |             |  |   |  | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |  |
| C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.) |  |  |  |             |  |          |  |             |  | D. PHONE (area code & no.)  |  |   |  |
| F - FEDERAL  |  | M - PUBLIC (other than federal or state) |  | P (specify) |  |          |  |             |  |   |  |   |  |
| S - STATE  |  | O - OTHER (specify)                      |  |             |  |          |  |             |  |   |  |   |  |
| P - PRIVATE  |  |  |  |             |  |          |  |             |  |   |  |   |  |
| E. STREET OR P.O. BOX  |  |  |  |             |  |          |  |             |  |   |  |   |  |
| P.O. BOX 957   |  |  |  |             |  |          |  |             |  |   |  |   |  |
| F. CITY OR TOWN  |  |  |  |             |  | G. STATE |  | H. ZIP CODE |  | IX. INDIAN LAND   |  |   |  |
| PAGO PAGO, TUTUILA   |  |  |  |             |  | SA       |  | 96799       |  | Is the facility located on Indian lands?                            |  |   |  |
|  |  |  |  |             |  |          |  |             |  | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |  |   |  |

## X. EXISTING ENVIRONMENTAL PERMITS

| A. NPDES (Discharges to Surface Water)   |   |  |  | D. PSD (Air Emissions from Proposed Sources)                               |   |  |  |
|--|---|--|--|--|---|--|--|
| 9  | N |  |  | 9  | P |  |  |
| A.S.O.O.O.O.02.7                         |   |  |  |  |   |  |  |
| B. UIC (Underground Injection of Fluids) |   |  |  | E. OTHER (specify)   |   |  |  |
| 9  | U |  |  | 9  |   |  |  |
|  |   |  |  | O.D.-93-02 (specify) Special Ocean Dumping Permit for high strength waste. |   |  |  |
| C. RCRA (Hazardous Wastes)               |   |  |  | E. OTHER (specify)   |   |  |  |
| 9  | R |  |  | 9  |   |  |  |
|  |   |  |  | (specify)  |   |  |  |

## XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

## XII. NATURE OF BUSINESS (provide a brief description)

VCS Samoa Packing Company, Inc. conducts the processing and packing of tuna fish and other ingredients for human consumption, canning of pet food, and the processing of fish by-products into fish meal.

## XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

| A. NAME & OFFICIAL TITLE (type or print) | B. SIGNATURE              | C. DATE SIGNED |
|--|---------------------------|----------------|
| DANIEL P. SULLIVAN<br>VICE PRESIDENT     | <i>Daniel P. Sullivan</i> | 28 May 77      |

## COMMENTS FOR OFFICIAL USE ONLY

| C |
|---|
|   |





Please print or type in the unshaded areas only

FORM  
**26**  
NPDES



U.S. ENVIRONMENTAL PROTECTION AGENCY  
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER  
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS  
*Consolidated Permits Program*

### I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

[illegible]

## II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item 8. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. (See Page 1A)

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary. (See Page 1B Attached)

[illegible]

OFFICIAL USE ONLY (effluent guidelines sub-categories)

C. Except for storm runoff, leaks, or spills, ... any of the discharges described in Items II-A or B intermittent or seasonal?

☐ YES (complete the following table)☒ NO (go to Section III)

| 1. OUTFALL<br>NUMBER<br><i>(list)</i> | 2. OPERATION(s)<br>CONTRIBUTING FLOW<br><i>(list)</i> | 3. FREQUENCY  |   | 4. FLOW                         |                     |  |                     | C. DUR-<br>ATION<br><i>(in days)</i> |
|---------------------------------------|---|---|---|---------------------------------|---------------------|--|---------------------|--------------------------------------|
|                                       |   | a. DAYS<br>PER WEEK<br><i>(specify<br/>average)</i> | b. MONTHS<br>PER YEAR<br><i>(specify<br/>average)</i> | a. FLOW RATE<br><i>(in mgd)</i> |                     | b. TOTAL VOLUME<br><i>(specify with units)</i> |                     |                                      |
|                                       |   |   |   | 1. LONG TERM<br>AVERAGE         | 2. MAXIMUM<br>DAILY | 1. LONG TERM<br>AVERAGE                        | 2. MAXIMUM<br>DAILY |                                      |
|                                       |   |   |   |                                 |                     |  |                     |                                      |

**III. PRODUCTION**

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ YES (complete Item III-B)☐ NO (to Section IV)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?

☒ YES (complete Item III-C)☐ NO (go to Section IV)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

| 1. AVERAGE DAILY PRODUCTION    |                     |  | 2. AFFECTED<br>OUTFALLS<br>(list outfall number) |
|--------------------------------|---------------------|--|--|
| a. QUANTITY PER DAY            | b. UNITS OF MEASURE | c. OPERATION, PRODUCT, MATERIAL, ETC.<br>(specify) |  |
| 345 (Average for 1992 to 1996) | tons/day            | Tuna   | 001  |
| 360 (Average for 1996)         | tons/day            | Tuna   | 001  |
| 500 (Projected future)         | tons/day            | Tuna   | 001  |

**IV. IMPROVEMENTS**

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of waste water treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (complete the following table)☒ NO (go to Item IV-B)

| 1. IDENTIFICATION OF CONDITION,<br>AGREEMENT, ETC. | 2. AFFECTED OUTFALLS |                        | 3. BRIEF DESCRIPTION OF PROJECT | 4. FINAL COMPLIANCE DATE |                   |
|--|----------------------|------------------------|---------------------------------|--------------------------|-------------------|
|  | a. NO.               | b. SOURCE OF DISCHARGE |                                 | a. RE-<br>QUIRED         | b. PRO-<br>JECTEC |
|  |                      |                        |                                 |                          |                   |

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

CONTINUED FROM PAGE 2

## V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided.  
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

| 1. POLLUTANT | 2. SOURCE   | 1. POLLUTANT | 2. SOURCE |
|--------------|---|--------------|-----------|
| None         | (All analytical data has been submitted to EPA under existing NPDES Permit Condition 2) |              |           |

## VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES (list all such pollutants below)

☒ NO (go to Item VI-B)

## CONTINUED FROM THE FRONT

## VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☒ YES (Identify the test(s) and describe their purposes below)

☐ NO (go to Section VIII)

Nine (9) chronic bioassay tests have been conducted under existing NPDES Permit Condition D.1. The first eight (8) tests have been reported to EPA. Results of the ninth test will be available within approximately 30 days of the date of submittal of this permit application. The tenth test is scheduled for the late summer - early fall of 1997

## VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ YES (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

☐ NO (go to Section IX)

| A. NAME   | B. ADDRESS  | C. TELEPHONE<br>(area code & no.) | D. POLLUTANTS ANALYZED<br>(list)   |
|---|---|-----------------------------------|--|
| All analyses reported in DMR's were done by VCS Samoa Packing except for occasional BOD <sub>5</sub> analyses done by AECOS   | AECOS<br>970 N. Kalaheo Ave.<br>Suite C 311<br>Kailua, HI 96734                       | (808) 254-5884                    | BOD <sub>5</sub>   |
| Priority pollutant analyses were done under the supervision of CH2M HILL by various laboratories as identified in reports of the semi-annual testing done under the existing NPDES Permit Condition D.2. and submitted to EPA | CH2M HILL<br>1111 Broadway<br>Suite 1200 94607<br>P.O. Box 12681<br>Oakland, CA 94604 | (510) 251-2426                    | All analyses except temperature, pH, and those specific parameters reported on DMR's |

## IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

|  |                                |
|--|--------------------------------|
| A. NAME & OFFICIAL TITLE (type or print) | B. PHONE NO. (area code & no.) |
| Daniel P. Sullivan, Vice President       | 619-597-4215                   |
| C. SIGNATURE                             | D. DATE SIGNED                 |
| <i>Daniel P. Sullivan</i>                | 28 May 97                      |

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1)

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

OUTFALL NO.  
001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

| 1. POLLUTANT                       | 2. EFFLUENT                         |                      |  |                                |  |                     |  | 3. UNITS (specify if blank) |         | 4. INTAKE (optional)       |          |                    |
|------------------------------------|-------------------------------------|----------------------|--|--------------------------------|--|---------------------|--|-----------------------------|---------|----------------------------|----------|--------------------|
|                                    | a. MAXIMUM DAILY VALUE              |                      | b. MAXIMUM 30 DAY VALUE (if available) |                                | c. LONG TERM AVG. VALUE (if available) |                     | d. NO. OF ANALYSES                       | a. CONCENTRATION            | b. MASS | e. LONG TERM AVERAGE VALUE |          | f. NO. OF ANALYSES |
|                                    | (1) CONCENTRATION                   | (2) MASS             | (1) CONCENTRATION                      | (2) MASS                       | (1) CONCENTRATION                      | (2) MASS            |  |                             |         | (1) CONCENTRATION          | (2) MASS |                    |
| a. Biochemical Oxygen Demand (BOD) | 2080                                | 10051 <sup>(1)</sup> | 1085                                   | 5152 <sup>(2)</sup>            | 683                                    | 3204 <sup>(3)</sup> | 36 <sup>(4)</sup>                        | mg/l                        | lbs/day |                            |          |                    |
| b. Chemical Oxygen Demand (COD)    | 1300                                | 6130 <sup>(5)</sup>  | -                                      | -                              | -                                      | -                   | 1 <sup>(6)</sup>                         | mg/l                        | lbs/day |                            |          |                    |
| c. Total Organic Carbon (TOC)      | 480                                 | 2263 <sup>(5)</sup>  | -                                      | -                              | -                                      | -                   | 1 <sup>(6)</sup>                         | mg/l                        | lbs/day |                            |          |                    |
| d. Total Suspended Solids (TSS)    | 472                                 | 2124                 | 292 <sup>(8)</sup>                     | 1315                           | 134 <sup>(9)</sup>                     | 629                 | 59 <sup>(10)</sup>                       | mg/l                        | lbs/day |                            |          |                    |
| e. Ammonia (as N)                  | 195                                 | 1089 <sup>(11)</sup> | 115 <sup>(12)</sup>                    | 585 <sup>(13)</sup>            | 73.4                                   | 344 <sup>(14)</sup> | 59 <sup>(15)</sup><br>30 <sup>(16)</sup> | mg/l                        | lbs/day |                            |          |                    |
| f. Flow                            | VALUE<br>0.91                       |                      | VALUE<br>0.72                          |                                | VALUE<br>0.56                          |                     | 59 <sup>(17)</sup>                       | -                           | mgd     | VALUE                      |          |                    |
| g. Temperature (winter)            | VALUE<br>100 (37.7) <sup>(18)</sup> |                      | VALUE<br>91 (32.8) <sup>(18)</sup>     |                                | VALUE<br>88 (31.1) <sup>(18)</sup>     |                     | 59 <sup>(18)</sup>                       | °F (°C)                     |         | VALUE                      |          |                    |
| h. Temperature (summer)            | VALUE<br>-                          |                      | VALUE<br>-                             |                                | VALUE<br>-                             |                     | -  | °C                          |         | VALUE                      |          |                    |
| i. pH                              | MINIMUM<br>6.0                      | MAXIMUM<br>9.6       | MINIMUM<br>6.5 <sup>(19)</sup>         | MAXIMUM<br>8.2 <sup>(19)</sup> | X                                      |                     | 59 <sup>(20)</sup>                       | STANDARD UNITS              |         | X                          |          |                    |

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

| 1. POLLUTANT AND CAS NO. (if available) | 2. MARK "X"         |                    | 3. EFFLUENT            |                       |  |          |  |          |                    | 4. UNITS         |         | 5. INTAKE (optional)       |          |                    |
|---|---------------------|--------------------|------------------------|-----------------------|--|----------|--|----------|--------------------|------------------|---------|----------------------------|----------|--------------------|
|   | a. BELIEVED PRESENT | b. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE |                       | b. MAXIMUM 30 DAY VALUE (if available) |          | c. LONG TERM AVG. VALUE (if available) |          | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS | e. LONG TERM AVERAGE VALUE |          | f. NO. OF ANALYSES |
|   |                     |                    | (1) CONCENTRATION      | (2) MASS              | (1) CONCENTRATION                      | (2) MASS | (1) CONCENTRATION                      | (2) MASS |                    |                  |         | (1) CONCENTRATION          | (2) MASS |                    |
| a. Bromide (24959-67-9)                 |                     | X                  |                        |                       |  |          |  |          |                    |                  |         |                            |          |                    |
| b. Chlorine, Total Residual             |                     | X                  |                        |                       |  |          |  |          |                    |                  |         |                            |          |                    |
| c. Color                                | X                   |                    | (21)                   |                       |  |          |  |          |                    |                  |         |                            |          |                    |
| d. Fecal Coliform                       |                     | X                  |                        |                       |  |          |  |          |                    |                  |         |                            |          |                    |
| e. Fluoride (16984-48-8)                |                     | X                  |                        |                       |  |          |  |          |                    |                  |         |                            |          |                    |
| f. Nitrate-Nitrite (as N)               | X                   |                    | <0.040 <sup>(22)</sup> | <0.19 <sup>(23)</sup> |  |          |  |          | 1 <sup>(24)</sup>  | mg/l             | lbs/day |                            |          |                    |

## ITEM V-B CONTINUED FROM FRONT

| 1. POLLUTANT AND CAS NO.<br>(if available)    | 2. MARK 'X'          |                      | 3. EFFLUENT            |          |   |          |   |          | 4. UNITS           |                  | 5. INTAKE (optional) |                            |          |                    |
|---|----------------------|----------------------|------------------------|----------|---|----------|---|----------|--------------------|------------------|----------------------|----------------------------|----------|--------------------|
|   | a. RECEIVED PRE-SENT | b. RECEIVED AIR-SENT | B. MAXIMUM DAILY VALUE |          | D. MAXIMUM 30 DAY VALUE<br>(if available) |          | C. LONG TERM AVG. VALUE<br>(if available) |          | f. NO. OF ANALYSES | g. CONCENTRATION | h. MASS              | E. LONG TERM AVERAGE VALUE |          | j. NO. OF ANALYSES |
|   |                      |                      | (1) CONCENTRATION      | (2) MASS | (1) CONCENTRATION                         | (2) MASS | (1) CONCENTRATION                         | (2) MASS |                    |                  |                      | (1) CONCENTRATION          | (2) MASS |                    |
| g. Nitrogen, Total Organic (as N)             | X                    |                      | 263 <sup>(25)</sup>    | 1384     | 168 <sup>(26)</sup>                       | 883      | 126 <sup>(26)</sup>                       | 589      | 59 <sup>(27)</sup> | mg/l             | lbs/day              |                            |          |                    |
| h. Oil and Grease                             | X                    |                      | 154                    | 826      | 114                                       | 474      | 56  | 263      | 59 <sup>(27)</sup> | mg/l             | lbs/day              |                            |          |                    |
| i. Phosphorus (as P), Total (7723-14-0)       | X                    |                      | 59                     | 353      | 37  | 182      | 25  | 117      | 59 <sup>(27)</sup> | mg/l             | lbs/day              |                            |          |                    |
| j. Radioactivity                              |                      |                      |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| (1) Alpha, Total                              |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| (2) Beta, Total                               |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| (3) Radium, Total                             |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| (4) Radium 226, Total                         |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| k. Sulfate (as SO <sub>4</sub> ) (14806-79-8) |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| l. Sulfide (as S)                             |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| m. Sulfite (as SO <sub>3</sub> ) (14266-45-3) |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| n. Surfactants                                |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| o. Aluminum, Total (7429-90-5)                |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| p. Barium, Total (7440-39-3)                  |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| q. Boron, Total (7440-42-8)                   |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| r. Cobalt, Total (7440-48-4)                  |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| s. Iron, Total (7439-89-6)                    |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| t. Magnesium, Total (7439-95-4)               |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| u. Molybdenum, Total (7439-98-7)              |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| v. Manganese, Total (7439-96-5)               |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| w. Tin, Total (7440-31-5)                     |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| x. Titanium, Total (7440-32-6)                |                      | X                    |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |

CONTINUED FROM PAGE 3 OF FORM 2-C

**PART C -** If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

| 1. POLLUTANT AND CAS NUMBER<br>(if available)    | 2. MARK 'X'            |                       |                      | 3. EFFLUENT  |          |   |          |   |          | 4. UNITS           |                  | 5. INTAKE (optional) |                            |          |                    |
|--|------------------------|-----------------------|----------------------|--|----------|---|----------|---|----------|--------------------|------------------|----------------------|----------------------------|----------|--------------------|
|  | a. TEST-ING RE-QUIR-ED | b. BE-LIEVED PRE-SENT | c. BE-LIEVED AB-SENT | a. MAXIMUM DAILY VALUE   |          | b. MAXIMUM 30 DAY VALUE<br>(if available) |          | c. LONG TERM AVG. VALUE<br>(if available) |          | d. NO. OF ANAL-YES | e. CONCENTRATION | f. MASS              | g. LONG TERM AVERAGE VALUE |          | h. NO. OF ANAL-YES |
|  |                        |                       |                      | (1) CONCENTRATION  | (2) MASS | (1) CONCENTRATION                         | (2) MASS | (1) CONCENTRATION                         | (2) MASS |                    |                  |                      | (1) CONCENTRATION          | (2) MASS |                    |
| <b>METALS, CYANIDE, AND TOTAL PHENOLS (28)</b>   |                        |                       |                      |  |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| 1M. Antimony, Total (7440-36-0)                  |                        |                       | X                    | ND   |          |   |          |   |          | 4                  | mg/l             | lbs/day              |                            |          |                    |
| 2M. Arsenic, Total (7440-38-2)                   |                        | X                     |                      | 0.032  |          |   |          |   |          | 8                  | mg/l             | lbs/day              |                            |          |                    |
| 3M. Beryllium, Total (7440-41-7)                 |                        |                       | X                    | ND   |          |   |          |   |          | 4                  | mg/l             | lbs/day              |                            |          |                    |
| 4M. Cadmium, Total (7440-43-9)                   |                        | X                     |                      | 0.004  |          |   |          |   |          | 8                  | mg/l             | lbs/day              |                            |          |                    |
| 5M. Chromium, Total (7440-47-3)                  |                        |                       | X                    | ND   |          |   |          |   |          | 8                  | mg/l             | lbs/day              |                            |          |                    |
| 6M. Copper, Total (7440-50-8)                    |                        | X                     |                      | 0.054  |          |   |          |   |          | 8                  | mg/l             | lbs/day              |                            |          |                    |
| 7M. Lead, Total (7439-92-1)                      |                        | X                     |                      | 0.0054   |          |   |          |   |          | 8                  | mg/l             | lbs/day              |                            |          |                    |
| 8M. Mercury, Total (7439-97-6)                   |                        |                       | X                    | ND   |          |   |          |   |          | 8                  | mg/l             | lbs/day              |                            |          |                    |
| 9M. Nickel, Total (7440-02-0)                    |                        |                       | X                    | ND   |          |   |          |   |          | 4                  | mg/l             |                      |                            |          |                    |
| 10M. Selenium, Total (7782-49-2)                 |                        | X                     |                      | 0.033  |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 11M. Silver, Total (7440-22-4)                   |                        |                       | X                    | ND   |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 12M. Thallium, Total (7440-28-0)                 |                        |                       | X                    | ND   |          |   |          |   |          | 4                  | mg/l             |                      |                            |          |                    |
| 13M. Zinc, Total (7440-66-8)                     |                        | X                     |                      | 0.740  |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 14M. Cyanide, Total (57-12-5)                    |                        |                       | X                    | ND   |          |   |          |   |          | 4                  | mg/l             |                      |                            |          |                    |
| 15M. Phenols, Total                              |                        | X                     |                      | 0.570  |          |   |          |   | (29)     | 7                  | mg/l             |                      |                            |          |                    |
| <b>DIOXIN</b>                                    |                        |                       |                      |  |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| 2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1784-01-6) |                        |                       | X                    | DESCRIBE RESULTS<br>A single test of a composite sample resulted in no detection of dioxin @ DL = 6.7 pg/l |          |   |          |   |          |                    |                  |                      |                            |          |                    |



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CONTINUED FROM THE FRONT

| 1. POLLUTANT AND CAS NUMBER<br>(if available) | 2. MARK 'X'         |                      |                     | 3. EFFLUENT            |          |  |          |  |          | 4. UNITS           |                  | 5. INTAKE (optional) |                            |          |                    |
|---|---------------------|----------------------|---------------------|------------------------|----------|--|----------|--|----------|--------------------|------------------|----------------------|----------------------------|----------|--------------------|
|   | a. TESTING REQUIRED | b. DELIVERED PRESENT | c. DELIVERED ASSENT | b. MAXIMUM DAILY VALUE |          | b. MAXIMUM 30 DAY VALUE (if available) |          | c. LONG TERM AVG. VALUE (if available) |          | d. NO. OF ANALYSES | a. CONCENTRATION | b. MASS              | b. LONG TERM AVERAGE VALUE |          | b. NO. OF ANALYSES |
|   |                     |                      |                     | (1) CONCENTRATION      | (2) MASS | (1) CONCENTRATION                      | (2) MASS | (1) CONCENTRATION                      | (2) MASS |                    |                  |                      | (1) CONCENTRATION          | (2) MASS |                    |
|   |                     |                      |                     |                        |          |  |          |  |          |                    |                  |                      |                            |          |                    |
| GC/MS FRACTION – VOLATILE COMPOUNDS (30)      |                     |                      |                     |                        |          |  |          |  |          |                    |                  |                      |                            |          |                    |
| 1V. Acrolein (107-02-8)                       |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 2V. Acrylonitrile (107-13-1)                  |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 3V. Benzene (71-43-2)                         |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 4V. Bis (Chloromethyl) Ether (542-88-1)       |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 5V. Bromoform (75-25-2)                       |                     |                      | X                   | 0.011 (30)             |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 6V. Carbon Tetrachloride (56-23-5)            |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 7V. Chlorobenzene (108-90-7)                  |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 8V. Chlorodibromomethane (124-48-1)           |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 9V. Chloroethane (75-00-3)                    |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 10V. 2-Chloroethylvinyl Ether (110-75-8)      |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 11V. Chloroform (67-66-3)                     |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 12V. Dichlorobromomethane (75-27-4)           |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 13V. Dichlorodifluoromethane (75-71-8)        |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 14V. 1,1-Dichloroethane (75-34-3)             |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 15V. 1,2-Dichloroethane (107-06-2)            |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 16V. 1,1-Dichloroethylene (75-35-4)           |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 17V. 1,2-Dichloropropane (78-87-5)            |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 18V. 1,3-Dichloropropylene (542-75-6)         |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 19V. Ethylbenzene (100-41-4)                  |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 20V. Methyl Bromide (74-83-9)                 |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 21V. Methyl Chloride (74-87-3)                |                     |                      | X                   |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |

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| 1. POLLUTANT AND CAS NUMBER<br>(If available)        | 2. MARK 'X'         |                     |                    | 3. EFFLUENT            |          |  |          |  |          | 4. UNITS           |                  | 5. INTAKE (optional) |                            |          |                    |
|--|---------------------|---------------------|--------------------|------------------------|----------|--|----------|--|----------|--------------------|------------------|----------------------|----------------------------|----------|--------------------|
|  | a. TESTING REQUIRED | b. BELIEVED PRESENT | c. BELIEVED ABSENT | a. MAXIMUM DAILY VALUE |          | b. MAXIMUM 30 DAY VALUE (If available) |          | c. LONG TERM AVG. VALUE (If available) |          | d. NO. OF ANALYSES | e. CONCENTRATION | f. MASS              | a. LONG TERM AVERAGE VALUE |          | b. NO. OF ANALYSES |
|  |                     |                     |                    | (1) CONCENTRATION      | (2) MASS | (1) CONCENTRATION                      | (2) MASS | (1) CONCENTRATION                      | (2) MASS |                    |                  |                      | (1) CONCENTRATION          | (2) MASS |                    |
|  |                     |                     |                    |                        |          |  |          |  |          |                    |                  |                      |                            |          |                    |
| GC/MS FRACTION – VOLATILE COMPOUNDS (continued) (30) |                     |                     |                    |                        |          |  |          |  |          |                    |                  |                      |                            |          |                    |
| 22V. Methylene Chloride (75-09-2)                    |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 23V. 1,1,2,2-Tetrachloroethane (79-34-5)             |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 24V. Tetrachloroethylene (127-18-4)                  |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 25V. Toluene (108-88-3)                              |                     |                     | X                  | 0.0062                 | (30)     |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 26V. 1,2-Trans-Dichloroethylene (156-60-5)           |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 27V. 1,1,1-Trichloroethane (71-55-6)                 |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 28V. 1,1,2-Trichloroethane (79-00-5)                 |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 29V. Trichloroethylene (79-01-6)                     |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 30V. Trichlorofluoromethane (75-69-4)                |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 31V. Vinyl Chloride (75-01-4)                        |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| GC/MS FRACTION – ACID COMPOUNDS (31)                 |                     |                     |                    |                        |          |  |          |  |          |                    |                  |                      |                            |          |                    |
| 1A. 2-Chlorophenol (95-57-8)                         |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 2A. 2,4-Dichlorophenol (120-83-2)                    |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 3A. 2,4-Dimethylphenol (105-67-9)                    |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 4A. 4,6-Dinitro-O-Cresol (534-52-1)                  |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 5A. 2,4-Dinitrophenol (51-28-5)                      |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 6A. 2-Nitrophenol (88-75-5)                          |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 7A. 4-Nitrophenol (100-02-7)                         |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 8A. P-Chloro-M-Cresol (59-50-7)                      |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 9A. Pentachlorophenol (87-86-5)                      |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 10A. Phenol (108-95-2)                               |                     | X                   |                    | 0.150                  | (32)     |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 11A. 2,4,6-Trichlorophenol (88-06-2)                 |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |

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| 1. POLLUTANT AND CAS NUMBER<br>(if available) | 2. MARK 'X'            |                        |                        | 3. EFFLUENT            |          |  |          |  |          | 4. UNITS            |                  | 5. INTAKE (optional) |                            |          |                     |
|---|------------------------|------------------------|------------------------|------------------------|----------|--|----------|--|----------|---------------------|------------------|----------------------|----------------------------|----------|---------------------|
|   | a. TEST-ING RE-QUIR-ED | b. DE-LIVERED FRA-SENT | c. DE-LIVERED FRA-SENT | a. MAXIMUM DAILY VALUE |          | b. MAXIMUM 30 DAY VALUE (if available) |          | c. LONG TERM AVG. VALUE (if available) |          | d. NO. OF ANAL-YSES | a. CONCENTRATION | b. MASS              | a. LONG TERM AVERAGE VALUE |          | b. NO. OF ANAL-YSES |
|   |                        |                        |                        | (1) CONCENTRATION      | (2) MASS | (1) CONCENTRATION                      | (2) MASS | (1) CONCENTRATION                      | (2) MASS |                     |                  |                      | (1) CONCENTRATION          | (2) MASS |                     |
|   |                        |                        |                        |                        |          |  |          |  |          |                     |                  |                      |                            |          |                     |
| GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (31)  |                        |                        |                        |                        |          |  |          |  |          |                     |                  |                      |                            |          |                     |
| 1B. Acenaphthene (83-32-9)                    |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 2B. Acenaphthylene (208-96-8)                 |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 3B. Anthracene (120-12-7)                     |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 4B. Benzidine (92-87-5)                       |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 5B. Benzo (a) Anthracene (56-55-3)            |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 6B. Benzo (b) Pyrene (50-32-8)                |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 7B. 3,4-Benzo-fluoranthene (205-99-2)         |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 8B. Benzo (ghi) Perylene (191-24-2)           |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 9B. Benzo (h) Fluoranthene (207-08-9)         |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 10B. Bis (2-Chloro-ethoxy) Methane (111-91-1) |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 11B. Bis (2-Chloro-ethyl) Ether (111-44-4)    |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 12B. Bis (2-Chloroisopropyl) Ether (102-80-1) |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)  |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 14B. 4-Bromophenyl Phenyl Ether (101-85-3)    |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 15B. Butyl Benzyl Phthalate (85-68-7)         |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 16B. 2-Chloronaphthalene (91-68-7)            |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)  |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 18B. Chrysene (218-01-9)                      |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 19B. Dibenzo (a,h) Anthracene (53-70-3)       |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 20B. 1,2-Dichlorobenzene (95-50-1)            |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |
| 21B. 1,3-Dichlorobenzene (541-73-1)           |                        |                        | X                      |                        |          |  |          |  |          | 8                   | mg/l             |                      |                            |          |                     |

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|  | 001            |

CONTINUED FROM PAGE V-6

| 1. POLLUTANT AND CAS NUMBER<br>(If available)           | 2. MARK 'X'         |             |             | 3. EFFLUENT            |          |   |          |   |          | 4. UNITS           |                  | 5. INTAKE (optional) |                            |          |                    |
|---|---------------------|-------------|-------------|------------------------|----------|---|----------|---|----------|--------------------|------------------|----------------------|----------------------------|----------|--------------------|
|   | a. TESTING REQUIRED | b. RECEIVED | c. OBSERVED | 8. MAXIMUM DAILY VALUE |          | b. MAXIMUM 30 DAY VALUE<br>(If available) |          | c. LONG TERM AVG. VALUE<br>(If available) |          | f. NO. OF ANALYSES | g. CONCENTRATION | h. MASS              | a. LONG TERM AVERAGE VALUE |          | d. NO. OF ANALYSES |
|   |                     |             |             | (1) CONCENTRATION      | (2) MASS | (1) CONCENTRATION                         | (2) MASS | (1) CONCENTRATION                         | (2) MASS |                    |                  |                      | (1) CONCENTRATION          | (2) MASS |                    |
| GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued) (3) |                     |             |             |                        |          |   |          |   |          |                    |                  |                      |                            |          |                    |
| 22B. 1,4-Dichlorobenzene (106-46-7)                     |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 23B. 3,3'-Dichlorobenzidine (91-94-1)                   |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 24B. Diethyl Phthalate (84-66-2)                        |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 25B. Dimethyl Phthalate (131-11-3)                      |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 26B. Di-N-Butyl Phthalate (84-74-2)                     |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 27B. 2,4-Dinitrotoluene (121-14-2)                      |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 28B. 2,6-Dinitrotoluene (608-20-2)                      |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 29B. Di-N-Octyl Phthalate (117-84-0)                    |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)   |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 31B. Fluoranthene (206-44-0)                            |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 32B. Fluorene (86-73-7)                                 |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 33B. Hexachlorobenzene (118-74-1)                       |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 34B. Hexachlorobutadiene (87-68-3)                      |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 35B. Hexachlorocyclopentadiene (77-47-4)                |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 36B. Hexachloroethane (67-72-1)                         |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 37B. Indeno (1,2,3-cd) Pyrene (193-39-8)                |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 38B. Isophorene (78-59-1)                               |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 39B. Naphthalene (91-20-3)                              |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 40B. Nitrobenzene (98-95-3)                             |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 41B. N-Nitrosodimethylamine (62-75-9)                   |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |
| 42B. N-Nitrosodi-N-Propylamine (621-64-7)               |                     |             | X           |                        |          |   |          |   |          | 8                  | mg/l             |                      |                            |          |                    |

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| CONTINUED FROM THE FRONT                                 | 2. MARK 'X'         |                     |                    | 3. EFFLUENT            |          |  |          |  |          | 4. UNITS           |                  | 5. INTAKE (optional) |                            |          |                    |
|--|---------------------|---------------------|--------------------|------------------------|----------|--|----------|--|----------|--------------------|------------------|----------------------|----------------------------|----------|--------------------|
| 1. POLLUTANT AND CAS NUMBER<br>(if available)            | a. TESTING REQUIRED | b. BELIEVED PRESENT | c. BELIEVED ABSENT | B. MAXIMUM DAILY VALUE |          | D. MAXIMUM 30 DAY VALUE (if available) |          | C. LONG TERM AVG. VALUE (if available) |          | d. NO OF ANAL YSES | B. CONCENTRATION | D. MASS              | A. LONG TERM AVERAGE VALUE |          | b. NO OF ANAL YSES |
|  |                     |                     |                    | (1) CONCENTRATION      | (2) MASS | (1) CONCENTRATION                      | (2) MASS | (1) CONCENTRATION                      | (2) MASS |                    |                  |                      | (1) CONCENTRATION          | (2) MASS |                    |
| GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued) (31) |                     |                     |                    |                        |          |  |          |  |          |                    |                  |                      |                            |          |                    |
| 43B. N-Nitro-sodiphenylamine (86-30-6)                   |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 44B. Phenanthrene (85-01-8)                              |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 45B. Pyrene (129-00-0)                                   |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| 46B. 1,2,4 - Tri-chlorobenzene (120-82-1)                |                     |                     | X                  |                        |          |  |          |  |          | 8                  | mg/l             |                      |                            |          |                    |
| GC/MS FRACTION – PESTICIDES (33)                         |                     |                     |                    |                        |          |  |          |  |          |                    |                  |                      |                            |          |                    |
| 1P. Aldrin (309-00-2)                                    |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 2P. $\alpha$ -BHC (319-84-6)                             |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 3P. $\beta$ -BHC (319-85-7)                              |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 4P. $\gamma$ -BHC (58-89-9)                              |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 5P. $\delta$ -BHC (319-86-8)                             |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 6P. Chlordane (57-74-9)                                  |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 7P. 4,4'-DDT (50-29-3)                                   |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 8P. 4,4'-DDE (72-55-9)                                   |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 9P. 4,4'-DDD (72-54-8)                                   |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 10P. Dieldrin (60-57-1)                                  |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 11P. $\alpha$ -Endosulfen (115-29-7)                     |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 12P. $\beta$ -Endosulfen (115-29-7)                      |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 13P. Endosulfen Sulfate (1031-07-8)                      |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 14P. Endrin (72-20-8)                                    |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 15P. Endrin Aldehyde (7421-93-4)                         |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |
| 16P. Heptachlor (76-44-8)                                |                     |                     | X                  |                        |          |  |          |  |          | 4                  | mg/l             |                      |                            |          |                    |

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|  | 001            |

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| 1. POLLUTANT<br>AND CAS<br>NUMBER<br>(if available) | 2. MARK 'X'                           |                                  |                                 | 3. EFFLUENT            |          |   |          |  |          | 4. UNITS                   |                       | 5. INTAKE (optional) |                               |          |                            |
|---|---------------------------------------|----------------------------------|---------------------------------|------------------------|----------|---|----------|--|----------|----------------------------|-----------------------|----------------------|-------------------------------|----------|----------------------------|
|   | a. TEST<br>INGR.<br>BY<br>QUIP.<br>ID | b. BEL-<br>IEVED<br>PRE-<br>SENT | c. BEL-<br>IEVED<br>AB-<br>SENT | a. MAXIMUM DAILY VALUE |          | b. MAXIMUM 30 DAY VALUE<br>(if available) |          | c. LONG TERM AVRG. VALUE<br>(if available) |          | d. NO. OF<br>ANAL-<br>YSES | a. CONCEN-<br>TRATION | b. MASS              | a. LONG TERM<br>AVERAGE VALUE |          | b. NO. OF<br>ANAL-<br>YSES |
|   |                                       |                                  |                                 | (1)<br>CONCENTRATION   | (2) MASS | (1)<br>CONCENTRATION                      | (2) MASS | (1)<br>CONCENTRATION                       | (2) MASS |                            |                       |                      | (1) CONCEN-<br>TRATION        | (2) MASS |                            |
|   |                                       |                                  |                                 |                        |          |   |          |  |          |                            |                       |                      |                               |          |                            |
| GC/MS FRACTION -- PESTICIDES (continued) (33)       |                                       |                                  |                                 |                        |          |   |          |  |          |                            |                       |                      |                               |          |                            |
| 17P. Heptachlor<br>Epoxide<br>(1024-57-3)           |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 18P. PCB-1242<br>(53469-21-9)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 19P. PCB-1254<br>(11097-69-1)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 20P. PCB-1221<br>(11104-28-2)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 21P. PCB-1232<br>(11141-16-5)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 22P. PCB-1248<br>(12672-29-6)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 23P. PCB-1260<br>(11096-82-5)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 24P. PCB-1016<br>(12674-11-2)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |
| 25P. Toxaphene<br>(8001-35-2)                       |                                       |                                  | X                               |                        |          |   |          |  |          | 4                          | mg/l                  |                      |                               |          |                            |

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**VCS Samoa Packing Company, Inc.**  
**Form 2C NPDES Permit Renewal Application**  
**End Notes for Item V Tables**

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1. Unless otherwise noted all daily maximum mass loads are calculated based on flow recorded for day of measurement.
2. Mass load calculated based on mean flow recorded for month of measurements.
3. Mass load calculated based on mean flow for Feb 1992 through Dec 1996 (BOD records for Oct 93 through Dec 1996).
4. BOD was measured twice per week (permit requires twice per month) and listed values are based on 36 monthly maximums and averages.
5. Mass load calculated based on flows measured during day when composite sample was acquired.
6. Single sample taken 12-13 March 1997; results not yet formally reported to EPA as of the date of this application.
7. Concentration calculated based on reported mass loading and mean monthly flow for month when sample was collected; probably biases the calculation too high.
8. Concentration calculated based on reported mass loading and mean monthly flow for month when samples were collected.
9. Concentration calculated based on reported mass loading and mean flow over the period of sample collection.
10. TSS was measured twice per week (as required by permit) and listed values are based on 59 monthly maximums and averages over the period Feb 1992 through Dec 1996.
11. Mass load calculated based on maximum daily flow for month when sample was collected; probably biases the calculation too high.
12. Thirty day average based on shorter time period than maximum daily or long term average. Time period of July 1994 through December 1996 was used.
13. Mass load calculated based on the monthly mean flow for the month of measurement.
14. Mass load calculated based on mean flow for period of measurements (Feb 1992 through Dec 1994).
15. Ammonia was measured twice per week (once per week required by permit) and listed values are based on 59 monthly maximums and averages over the period Feb 1992 through Dec 1996 (except as noted below).
16. Maximum monthly averages for ammonia were based on 30 months from July 1994 through Dec 1996.
17. Flows were measured continuously. Reported measurements of based on monthly maximum and monthly averages over 59 months (Feb 1992 through Dec 1996).
18. Temperature is measured continuously and reported measurements are based on 59 monthly maximums (Feb 1992 through Dec 1996). It is noted that no seasonal differences are readily discernible in the record and separate summer and winter values are not given.
19. Long term averages are reported in place of maximum 30 day averages.
20. pH is measured continuously and reported measurements are based on 59 monthly maximums (Feb 1992 through Dec 1996).
21. Color is know to be present but not considered important. No analyses have been conducted with the period of the current permit.

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**End Notes for Item V Tables**

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22. Analytical test was at a detection limit higher than expected concentrations.
23. Mass load calculated based on flows measured during day when composite sample was acquired.
24. Single sample taken 12-13 March 1997; results not yet formally reported to EPA as of the date of this application.
25. Concentration calculated based on reported mass loading and mean monthly flow for month when sample was collected; probably biases the calculation too high. Note reported value is for TKN which includes ammonia nitrogen.
26. Concentration calculated based on reported mass loading and mean monthly flow for month when samples were collected. Note reported value is for TKN which includes ammonia nitrogen. Note reported value is for TKN which includes ammonia nitrogen.
27. Samples for O&G, TN and TP collected twice per week per permit requirements (TN and TP may occasionally be collected more often). Reported values based on report monthly maximum and average values over 59 months (Feb 92 through Oct 96).
28. Testing of specified priority pollutants was required by NPDES Permit condition. An additional sample was conducted in March of 1997 for all metals, cyanide, and total phenols which has not yet been reported to EPA. The results will be forwarded to EPA within approximately 30 days. Another sample is scheduled for selected metals (those indicated as sampled 8 times to date) and total phenol for late summer - early fall 1997.
29. Measured concentrations for total phenols ranged from 0.084 to 0.570 and the seven readings averaged 0.223 mg/l
30. Testing of specified priority pollutants was required by NPDES Permit condition. An additional sample was conducted in March of 1997 which has not yet been reported to EPA and was not included in preparing this application. The results will be forwarded to EPA within approximately 30 days. It is noted that the compounds indicated as detected were only found once and are believed to be from laboratory contamination and/or matrix interference. Acetone, 2-butanone and xylene were occasionally detected but are also believed to be attributable to laboratory contamination and/or matrix interference. These results were previously reported to EPA. It is not believed that any volatile compounds will be found in effluent from seafood processing, particularly after DAF treatment. No additional samples are planned during the period of the existing permit.
31. Testing of specified priority pollutants was required by NPDES Permit condition. An additional sample was conducted in March of 1997 which has not yet been reported to EPA. The results will be forwarded to EPA within approximately 30 days. Another sample is scheduled for semi-volatile compounds for late summer - early fall 1997.
32. Phenol was detected in 6 of 8 samples with concentrations ranging from <sup>0.069</sup>~~0.09~~ to 0.150 mg/l with an average of 0.101 mg/l. 4-methylphenol was detected in all eight samples as previously reported to EPA, and benzoic acid was detected in the first one of eight samples.
33. Testing of specified priority pollutants was required by NPDES Permit condition. An additional sample was conducted in March of 1997 which has not yet been reported to EPA. The results will be forwarded to EPA within approximately 30 days. No additional samples are planned during the period of the existing permit. No pesticides/PCBs were detected.